Intelligent Money

Current thinking from Haven Financial Advisors

How much *DO* you need to retire?

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Special Notes of Interest:

In December, the labor participation rate for men in the USA fell to its lowest level (69.1%) since records were kept in 1948.

Among elderly social security beneficiaries, 23% of married couples and 46% of single individuals rely on Social Security for 90% or more of their income.

The question is old and often repeated. Yet its answer remains stubbornly elusive. There are so many variables that factor into solving the retirement conundrum that no definitive solution will likely emerge. The good news is that many practitioners have begun investigating the problem armed with desktop simulation software. They've come up with some useful results and this edition of ***Intelligent Money*** will summarize them.

A Brief History of Retirement Distribution Rules

Researchers have been assessing the interaction of asset allocation with sustainable retirement distributions for some time. One of the earliest practitioners to write substantively on the topic was William Bengen. His key paper appeared 20 years ago in the **Journal of Financial Planning**. He inferred the survivability of various withdrawal rates based on historical asset returns for a balanced portfolio of 50% stocks and 50% bonds.

Bengen did conclude that a 4% initial portfolio drawdown could be taken in year one and adjusted upward for inflation thereafter. Such a strategy preserved wealth for every rolling 30 year period starting in 1926. A thirty year retirement takes the individual to age 95, after which point it is very unlikely he will be an active spender. While Bengen's paper never made mention of a 4% rule, later interpretation of his findings gave rise to the convention that 4% was the largest safe withdrawal rate with a balanced portfolio. The "4% rule" was born.

Recent practitioner research in this same area has raised doubts about the 4% rule. The oft cited culprit is the bond buying spree of the Federal Reserve that has driven interest rates well below their long term averages. Bond index funds yielded over 6% when Bengen's paper was published. Fixed income interest rates are well below 3% today and have been so for about five years. If half of one's portfolio is saddled with low expected returns, it may indeed be worth revisiting Bengen's results.

In the past 18 months, the brokerage firms of Vanguard and Schwab have come up with their own versions of the 4% rule. Vanguard now recommends an initial withdrawal of 3.8%. Schwab weighs in closer to 3%. Notably, both firms believe that initial withdrawal rates can be higher than 4% provided future withdrawals *adapt* somewhat to ongoing market action. We'll revisit the possible uses of adaptive consumption in more detail later.

A Benchmark for Retirement Distributions

Withdrawal rates adjusted only for inflation more often than not leave vast sums unclaimed at the end of the retiree's life. William Bengen found that an initial 4% withdrawal almost ***always*** worked for at least 30 years. Nothing wrong with being really safe but perhaps risky assets aren't the only way to deliver on the retirement bargain.

Stocks and bonds deliver variable returns. Since retirees are usually looking for safety under stressful conditions, withdrawal rates must be very subdued to accommodate very negative markets. But what if we restricted ourselves to some very low risk investment products whose cash flows dovetailed closely with a retiree's needs. Could we "up our game"?

A recent article by Stephen Sexauer and Laurence Siegel from the ***Financial Analyst's Journal*** constructs a low risk method for investment in retirement that greatly minimizes the risk of shortfall … if the retiree can accurately project his or her spending requirements. It relies exclusively on Treasury Inflation Protected Securities (TIPs) and fixed annuities.

TIPs have traded in the US since 1997. They are treasury obligations whose principal amount adjusts upward with the inflation rate twice a year. The close link with observed inflation means their cash flows mesh nicely with retiree expectations. Fixed annuities pay the annuitant a fixed or specified amount each month until death. Annuities, like bank deposits, enjoy a measure of insurance protection if they are kept below certain levels.

Sexauer and Siegel model a newly retired individual who buys a ladder of TIPs to fund consumption during the first twenty years of retirement beginning at 65. At

the same time, that individual buys a deferred annuity whose initial payment dovetails closely with last cash distribution from the TIPs at age 85. That fixed annuity eliminates the longevity risk from the investment strategy.

The required expenditures on TIPs and annuities as well as the proportions of the two products are a function of interest rates and other market conditions. In today's financial markets, an investor can invest $100,000 in TIPs and annuities to fund an inflation-adjusted payout of about $4700 starting at age 65. The specific implementation would require an $85,000 outlay to TIPs and $15,000 to a deferred annuity.

That's a nice takeaway. A potential retiree can be reasonably assured of a safe retirement provided that he can save 21.3 times his required consumption at age 65.

As helpful as these calculations are as a benchmark, the foregoing investment strategy has shortcomings in real life. There is no residual value to the investment portfolio once the annuitant dies. Most retirees would like to pass on a legacy. Nor is there any provision for unanticipated expenditures. No retiree can really project their required consumption needs for the next two or three decades. Most of us would like some additional upside to our investments to provide for emergencies.

The investment action outlined in the FAJ article is a decumulation strategy intended for retirees. It may not be suitable for those still saving for retirement. Because of its low risk, an investment in TIPs and annuities is low

return. In today's market conditions, ten year TIPs offer a premium that is roughly 0.50% higher than inflation. For individuals with reasonably long time horizons to accumulate wealth, more conventional investment strategies involving stocks and bonds may still be the best option.

Asset Allocation Through Time

Risky assets play a constructive role both before and after retirement. Most conventional retirement planning strategy holds that investment portfolios should gradually reduce risk as the investor ages. Rules of thumb abound that suggest that one's allocation to bonds increases over time. A declining investment horizon traditionally calls for a greater weighting to lower risk bonds at the expense of stocks.

More recent simulations of the retirement planning problem have taken issue with the strategy of gradual portfolio risk reduction. Wade Pfau and Michael Kitces found that the objectives of retirement saving are best met when portfolio risks are minimized *at the time of retirement*. This is the point of greatest financial vulnerability and should be accompanied by a correspondingly low risk portfolio.
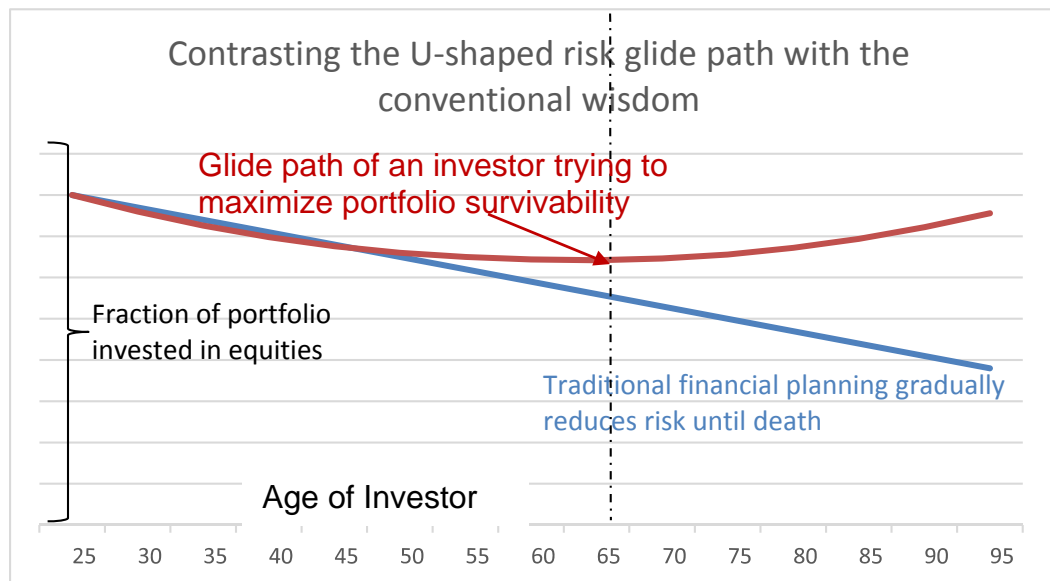
When work stops on or about age 65, the investor's human capital is exhausted while their remaining investment horizon remains long. An analysis of retirement investment paths reveals one of the common attributes of "unsuccessful" scenarios is poor real portfolio returns **early** in the individual's retired life. Makes sense. After all, very few octogenarians have been financially derailed by a bad stock market. By that point, most of their consumption is behind them.

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Contrasting the U-shaped risk glide path with the conventional wisdom

Glide path of an investor trying to maximize portfolio survivability

Fraction of portfolio invested in equities

Traditional financial planning gradually reduces risk until death

Age of Investor

25 30 35 40 45 50 55 60 65 70 75 80 85 90 95

Pfau and Kitces recommend an optimal equity allocation through time that is U-shaped, reaching its minimum at age 65. The actual equity weighting might vary depending on the capital market expectations or withdrawal rates in retirement. Higher retirement withdrawal rates are more successfully funded by riskier portfolios with greater equity concentrations. Today's bond yields are substantially lower than long run experience. If one accepts that equity return premiums will remain at today's elevated levels, that argues for higher overall equity concentrations as well.

Adaptive Distributions in Retirement

So far, we've discussed the impact of differing investment strategies on straight forward retirement consumption. The consumption function was smoothly increasing with inflation without any need for personal fiscal adjustments. But, in the real world, seniors can adjust their needs within reasonable bounds based on capital market experience. Can certain adjustments interact intelligently with financial returns to generate better outcomes?

There is roughly a one in five chance that one or more spouses turning age 65 this year will live to age 95. Prudent financial planners should at least consider a 30 year drawdown horizon for them. That's a lot of time for surprises. The newly retired generally recognize that their best years to travel and generally enjoy life lie just ahead. Folks in their 90s that remain active are a rare breed. Optimal retirement for most people typically involves higher spending amounts early with decreasing real outlays as one ages.

Retirees can comfortably spend more than 4% of their portfolio initially as long as much of that spending is truly discretionary. Financial success in retirement is greatly enhanced if the individual is in a position to cut back temporarily on distributions in the aftermath of bad investment returns.

Corey Hoffstein reviewed some dynamic distribution strategies in a recent **Financial Advisor** Magazine. He simulated some adaptive distribution strategies and compared them to the standard inflation-adjusted withdrawal schemes commonly referenced in the literature. The results argued persuasively for the superiority of adaptation.

He evaluated various withdrawal strategies against $1 million in assets over a 30 year time horizon. 100,000 separate return paths were simulated for each strategy. Three measures were compiled: probability of failure, present value of surplus, and present value of withdrawals.

Any withdrawal scenario that exhausts the initial endowment of $1 million was considered a failure. Clearly, the lower this probability, the better the strategy. The present value of surplus was a computation of the average residual value of the portfolio at the end of 30 years. Generally, the goal is to minimize the value of "leftover" assets. At the same time, anyone's reasonable objective is to maximize the present value of their actual lifetime withdrawals. That last measure should be as high as possible.

The baseline or control withdrawal strategy required a $40,000 distribution the first year with subsequent withdrawals adjusted upward for inflation (Strategy A). This is similar to William Bengen's original "4% rule".

One of the many adaptations to this rule that Hoffstein reviewed was to determine the withdrawal amount based on the size of the current portfolio balance divided by the number of retirement years remaining. The withdrawal rate was capped at 10% of the balance (Strategy B). Such a strategy would have intuitive appeal in that it allows for larger distributions when the portfolio returns are good and pares them back during lean years.

	Probability of Failure	Cost of Surplus	Present Value of Withdrawals
A	5.0%	20.8%	$795,000
B	0.0%	1.8%	$1.013,000

The foregoing chart reveals that relatively simple adaptations can measurably improve outcomes in the retirement experience. There are other strategies that begin with relatively large distribution levels but were careful to reduce in the event that portfolio balances fell below certain thresholds. All were able to outperform the 4% rule based on the metrics outlined in the chart.

What are the key takeaways here? Equity investments continue to play a key role in one's investment portfolio, even in retirement. The most successful retirement distribution plans adapt deliberately and moderately to poor investment outcomes. And, if all else fails, the 4% rule is not a bad starting point for a withdrawal strategy.

Bengen, William. (1994). Determining Withdrawal Rates Using Historical Data. *Journal of Financial Planning.*

Hoffstein, Corey. (2013). The 4 Percent Rule: Static Decisions In A Dynamic World. *Financial Advisor Magazine.*

Kitces, Michael and Wade Pfau (2013). Reducing Retirement Risk with a Rising Equity Glidepath. *Journal of Financial Planning.*

Siegel, L. and Sexauer, S. (2013). A Pension Promise to Oneself. *Financial Analyst's Journal.*