# New Research on How Much Clients can Spend in Retirement

By Wade Pfau
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A major problem remains unsolved in the discipline of financial planning: How should clients adjust their spending patterns in response to changes in the value of their retirement portfolios? The original research on this topic was based on a fixed percentage of assets, adjusted for inflation. Numerous refinements to that model have been proposed, and I will look at how the updated models can help clients maintain their desired standard of living without depleting their assets.

A standard assumption in safe withdrawal rate studies for retirement is that a client spends constant inflation-adjusted withdrawal amounts until wealth is depleted. In this framework, the initial withdrawal rate is the only information needed to calibrate a strategy. This is a simplifying assumption for research purposes: It supports a smooth and predictable spending stream as long as financial assets are not depleted. But retirees will avoid playing this game of chicken, and they will usually choose to reduce their spending rather than see their financial assets plummet toward zero.

At the other extreme for systematic withdrawal strategies is the assumption that the client would spend a constant percentage of the remaining portfolio balance in each year of retirement. A variation of the constant percentage strategy is to base retirement spending on the required minimum distribution (RMD) percentage rules developed by the Internal Revenue Service.

Real spending can increase or decrease along with the fortunes of the market. This can ensure that wealth will not run out, though it provides no protection against low and painful levels of spending. Portfolio volatility can also wreak havoc on attempts to plan a stable budget.

Countless proposals have been made for dynamic withdrawal rates to provide a compromise between the desire to plan ahead and the need to make spending adjustments to reduce the odds of asset depletion. Such approaches seek balance between constant amounts and constant percentage extremes. I will focus on several research-based methods that I believe will best resonate with advisors. Each of these methods was introduced and developed in articles in the *Journal of Financial Planning* (JFP) and other practitioner-based research journals. The methods include the decision rules developed by Jonathan Guyton and William Klinger (JFP - October 2004 & March 2006), the joint work of Larry Frank, John Mitchell and David Blanchett (JFP - April 2009, June 2010, November 2011, March 2012, & December 2012) and subsequent modifications made by David Blanchett with co-authors from Morningstar (*Retirement Management Journal*, Fall 2012, & JFP – September 2013). Links to each article are provided in the discussion below.

**Guyton and Klinger's decision rules**

Jonathan Guyton's decision rules are quite popular with advisors, and the most modern form of these rules is outlined in a March 2006 article from the JFP written with William Klinger. Guyton introduced his approach in an earlier 2004 article, asking in its subtitle, "Is the 'Safe' Initial Withdrawal Rate *Too* Safe?" The fundamental conclusion of his analysis was that clients who are willing to make provisions for spending cuts, should the need arise, can confidently start with a higher withdrawal rate than deemed appropriate when using a constant inflation-adjusted strategy. Guyton's rules allow clients to begin retirement with a higher withdrawal rate, understanding that future spending may not always increase with inflation and may need to be cut in certain circumstances.

Guyton identified four decision rules that advisors can apply to client portfolios:

1. **The portfolio management rule**: The focus of this rule is on the asset classes from which withdrawals are taken and how the portfolio is rebalanced. The idea is to take withdrawals from the assets that had the greatest growth in the previous year and to move excess portfolio gains (beyond what is needed for the withdrawal) into a cash account dedicated to future withdrawals. For example, equities are not sold in years following a negative return as long as there are sufficient assets from other sources to meet withdrawal needs.

2. **The withdrawal rule:** Each year's withdrawal amount increases by the previous year's inflation rate, unless the previous year's portfolio total return was negative and caused the current withdrawal rate to exceed the initial withdrawal rate. In those cases, the withdrawal amount is frozen with no inflation adjustment. There are no make-ups for missed withdrawal increases.

3. **The capital preservation rule:** If the current withdrawal rate has risen by more than 20% above the initial withdrawal rate (e.g., if the initial withdrawal rate was 5%, then the threshold is 6%), then current year spending is reduced by 10%. The rule is no longer applied within 15 years of the maximum planning age.

4. **The prosperity rule:** Conversely, if the current withdrawal rate has fallen by more than 20% below the initial withdrawal rate (e.g., if the initial withdrawal rate was 5%, then the threshold is 4%), current year spending is increased by 10%. Otherwise, retirees might miss out on being able to increase spending in a sustainable manner when markets are doing well.

**Age-based, three-dimensional distribution model**

Less well known to advisors is an approach that is closely tied to how actuaries view the retirement-spending problem. The age-based, three-dimensional distribution model was

developed by Frank, Mitchell and Blanchett in a series of *JFP* articles (see here, for example). They viewed retirement spending as a dynamic process and believed that the sustainability of a given plan should be revisited frequently. Since retirement is an ongoing process, their focus was always on the current withdrawal rate rather than the initial safe withdrawal rate.

In contrast to Guyton's decision rules, the three-dimensional distribution model suggests making frequent recalculations of the probability of failure for a strategy. This is the primary measure of whether a strategy is sustainable. Spending adjustments are made with regard to the probability of failure.

While Guyton's decision rules focused on a fixed planning horizon, Frank, Mitchell and Blanchett suggested using a dynamic measure of remaining life expectancy, noting that withdrawal rates can increase as the remaining time horizon shortens. This consideration is only tangentially addressed within Guyton's decision rules, which decree that the capital preservation rule should no longer be used within 15 years of the planned time horizon.

Frank, Mitchell and Blanchett developed a three-dimensional model for factors that determine the forward-looking sustainable withdrawal rate from a given point in time: age, market returns and asset allocation.

The most important factor is age, which affects the length of the remaining distribution period and the longevity risk. William Bengen's original safe withdrawal rate research based retirement planning on a fixed horizon of 30 years. But mortality and survivorship data should be used to dynamically measure the remaining life expectancy as retirement progresses. Because the withdrawal rate is dynamic, withdrawals can be based on remaining life expectancy rather than a longer and more conservative planning horizon.

Next in importance is the sequence of market returns. Frank, Mitchell and Blanchett argued that the best way to measure sequence-of-returns risk is through the probability of failure for a retirement withdrawal strategy. As their approach argued that spending should fluctuate in response to market returns, they further argued that sequence of returns risk is always present in a retiree's portfolio and is not just a symptom of the early years of retirement. They noted that if spending doesn't adjust, then the rate of withdrawal will either continue to grow or decline depending on whether the remaining assets are being depleted or continuing to grow. It is when the probability of failure for a particular strategy begins to grow that sequence-of-returns risk is manifested. To maintain the same probability of failure, the withdrawal rate will need to adjust over time. Since the remaining time horizon shortens as years pass, the withdrawal rate that corresponds to a given probability of failure will increase.

The third factor, which has the smallest effect on the sustainable withdrawal rate, is the asset-allocation choice.

An important question is: When should advisors recommend a spending reduction to clients? This is what Guyton's withdrawal and capital preservation rules attempt to answer. Frank, Mitchell and Blanchett explained that the current withdrawal rate is directly connected to the probability of failure. They framed the issue in terms of the maximum probability of failure at which retirees should retrench. They suggested that a 30% failure rate is an important upper bound — beyond this point, retirees will experience more drastic spending reductions if action is not taken. Retrenchment can be avoided until a 30% probability of failure is reached.

**The mortality-updating constant probability of failure approach**

Blanchett subsequently modified some features of this joint work by building a mathematical model to maximize "utility." This identifies parameters for a spending path that best satisfies client preferences to spend as much as possible while also avoiding outcomes in which spending falls too low. In joint work published with Maciej Kowara and Peng Chen in a 2012 article in the *Retirement Management Journal*, he called this revised approach the mortality-updating constant probability of failure. A complication they addressed is the difficulty in choosing the remaining time horizon to use and the acceptable probability of failure. One can behave more conservatively by using the withdrawal rate associated with a given probability of failure over a longer planning horizon or by choosing a lower probability of failure for a given planning horizon.

Blanchett and co-authors determined that for a wide range of client risk-aversion levels, the optimal parameters to use when choosing a sustainable withdrawal rate are a 20% probability of failure and a planning horizon equal to the client's remaining life expectancy plus two years. These choices, when combined with the client's asset-allocation and capital-market expectations, provide an answer for the sustainable withdrawal rate looking forward from that point in time. Most recently, Blanchett prepared a simple formula to update sustainable withdrawal rates on a year-by-year basis, which he described in a September 2013 JFP article. As this work called for annual changes to withdrawals, the solution results in more variable spending than the original Frank, Mitchell and Blanchett determination that spending may be left alone until the 30% failure-rate barrier is broached.

**Judging the approaches**

Each of these approaches provides an effective and viable method for managing a client's withdrawals in retirement. The adjustments prescribed by these models in response to portfolio movements are all more efficient than a constant inflation-adjusted amount strategy. They allow

clients to spend a higher proportion of their nest eggs and reduce the odds of experiencing extremely low withdrawals.

Guyton's decision rules can be well understood by advisors and clients. They provide a 10% maximum reduction to year-by-year spending and are widely used in practice. On the other hand, the use of a fixed planning horizon is circumspect. Also, financial assets can still be depleted, as the capital preservation rule may not always act quickly enough to prevent a portfolio from plummeting toward zero.

The other alternatives are newer and are more closely linked to underlying actuarial models, but it will be hard for advisors to implement them. Successful implementation requires a powerful Monte Carlo simulator that can calculate probabilities of failure based on capital market expectations and remaining life expectancy. But David Blanchett's breakthrough in his September 2013 article could change the paradigm in this regard, as he provides a simple formula for advisors to determine an appropriate withdrawal rate based on client characteristics and preferences.

This being said, I have a few concerns about these approaches. They are incomplete retirement income strategies, at least for clients who are able to create budgets reflecting their retirement spending needs and goals. Each approach indicates how much can be spent, which is nice to know, but this budget is not otherwise connected to any lifestyle-spending goals or minimum needs. For clients who could gain a lot of value from spending a bit more than what is deemed sustainable, however, the tradeoff may be worth it.

Also, these approaches don't pay enough attention to just how low spending might fall, as they instead focus on the present value of total lifetime spending as a performance measure. That being said, these concerns can be addressed. For instance, Manish Malhotra of Income Discovery has looked at the performance of Guyton-based decision rules using three metrics: the average income supported by a strategy, how far spending fell from its initial level over the retirement period and the probability that spending will fall by at least 40% over the retirement period. This measure must be quantified and visualized for clients to understand the full implication of their dynamic-spending strategy.

Finally, these approaches are probability-based in nature. They focus on keeping failure rates low, though clients are nonetheless exposed to market volatility and potentially significant drops in spending. A separate school of thought focuses on how annuities or fixed-income assets held to maturity can help to secure spending in a safer way by eliminating market risk. By contrast, the approaches I discussed above leave out a role for income annuities and bond ladders to help build a sustainable income floor for clients. Especially for clients with little flexibility to reduce spending, variable-withdrawal rate approaches do not provide a complete solution.

I recommend using variable withdrawal-rate strategies to help determine sustainable spending levels and just how much spending might be reduced under adverse market conditions. Rather than providing a probability of failure, these strategies can express results as a probability that spending may fall by a certain level. For example, a strategy might indicate there is a 20% chance that spending might fall by at least 30% prior to age 95. If the initial sustainable spending amount or the potential subsequent shortfalls do not fit into a client's budget, then the variable withdrawal rate analysis can provide an entry point into a deeper discussion about building a more complete retirement income strategy.

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*Wade D. Pfau, Ph.D., CFA, is a professor of retirement income in the new Ph.D. program in financial services and retirement planning at the American College in Bryn Mawr, PA. He is also the lead financial planning scientist for inStream Solutions. He actively blogs about retirement research. See his Google+ profile for more information.*