RESEARCH REVIEW

Vol. 12, No. 1, 2023

‘Retirement Planning: Is One Number Enough?’

BY JAVIER ESTRADA

Article Review Retirement Retirement Income

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The short answer to the question posed in the title of this article is, "No." And although financial advisors may have a tendency to overwhelm clients with numbers, in this case more numbers are better. That’s because the analytics produced by the author are designed to simultaneously be more robust and tell clients a story they can easily understand. In "Retirement Planning: Is One Number Enough?," Javier Estrada moves forward on an investment research continuum that has been developing over the past 15 years. His work here focuses on understanding and communicating the relative strength of retirement funding versus measuring how often financial resources exceed or fail to meet an income goal.

FAILURE RATE VERSUS COVERAGE RATIO

Despite significant advances in computing power and a relatively extensive body of research on the nature of retirement, assumptions in retirement research and income planning tools have evolved only modestly over the last 30 years.
—Blanchett (2022)

In this quote, David Blanchett is referring to the use of simplistic measures of the chance of success for retirement income that are produced by industry-standard Monte Carlo models. When first introduced, Monte Carlo techniques were a significant step forward in communicating funding adequacy. But, according to both Blanchett (2022) and Estrada (2023), simply knowing the ratio of success to failure is no longer good enough. Both authors are on a development track that proposes understanding the range of outcomes around the digital success/failure output of common Monte Carlo models. They both seek to answer the question, "By how much did I miss (or exceed) the retirement funding goal?" in addition to knowing how often the goal was achieved.

According to Estrada, the coverage ratio aims to overcome the two shortcomings of the failure rate. It aims to distinguish, first, between a strategy that fails early and another that fails late into a retirement period; and second, between a strategy that leaves a small bequest and another that leaves a large bequest.

The formula for the coverage ratio in retirement in period $t(C_t)$ is

$$C_t = Y_t/L$$

where *Yt* is the number of years of inflation-adjusted withdrawals sustained by a strategy, both during and after the retirement period, and *L* is the length of the retirement period. Estrada explains below:

> *By definition, C<1 indicates that the strategy depleted the portfolio before the end of a retirement period; C>1 indicates that the strategy sustained withdrawals through an entire retirement period and left a bequest; and C=1 indicates that the strategy sustained withdrawals exactly through the end of a retirement period and left no bequest.*
>
> *To illustrate, consider a 30-year retirement period, a $1,000 retirement portfolio, annual inflation-adjusted withdrawals of $40, and three strategies. The first strategy depleted a portfolio in 24 years, the second did so in exactly 30 years, and the third sustained withdrawals for 30 years and left a bequest of $240 (which can support another six years of $40 withdrawals). Then, Yt would be 24, 30, and 36, for the first, second, and third strategies; and Ct would respectively be 0.8, 1.0, and 1.2.*

CLIENT COMMUNICATION

A second issue brought up by Estrada (2023) is the challenge of keeping the messaging packaged in a way that can be understood by clients. Initially, a more complex approach was taken by Estrada in an earlier paper produced with his research partner Mark Kritzman. Estrada and Kritzman (2018) employed a "utility-based framework" that modified the coverage ratio calculation. In 2022, Blanchett also explored a more analytically sophisticated approach, arriving at a "goal completion score," which was calculated by dividing "certainty-equivalent utility-adjusted income" (*Ut*) by the income goal (*g*).

In this update, Estrada walks back from the use of an enhanced utility function and instead tries to thread the needle between delivering robust analytics and providing a digestible evaluation or recommendation to a client. For this article, there is no utility adjustment for outcomes where $C<1$ versus when $C\geq1$. In addition, Estrada also avoids the sole use of an average outcome and instead provides a distribution of coverage ratios. Blanchett, in a presentation at the Investments & Wealth Institute ACE Academy 2023, appeared to also provide simplified messaging by producing a table of model iterations that compares and contrasts the "chance of success" and "completion of goal" approaches. Blanchett’s table also capped success at 100 percent, which eliminates a positive bias caused by including amounts in excess of the target time frame. Table 1 illustrates Blanchett’s work.

Table 1 PERCENTAGE CHANCE THAT $100 A YEAR FOR 10 YEARS GOALS IS MET

		YEAR										Pass or Fail?	% of Goal
		1	2	3	4	5	6	7	8	9	10		
Run#	1	$100	$100	$100	$100	$100	$100	$100	$100	$100	$99	0	100%
	2	$100	$100	$100	$100	$100	$100	$100	$100	$80	$80	0	96%
	3	$100	$100	$100	$100	$100	$50	$50	$50	$50	$50	0	75%
	4	$100	$100	$100	$5	$5	$5	$5	$5	$5	$5	0	34%
	5	$100	$100	$100	$100	$100	$100	$100	$100	$100	$50	0	95%
	6	$100	$100	$100	$100	$100	$100	$100	$100	$100	$100	1	100%
	7	$100	$100	$100	$100	$100	$100	$100	$100	$100	$100	1	100%
	8	$100	$100	$100	$100	$100	$100	$100	$100	$100	$100	1	100%
	9	$100	$100	$100	$100	$100	$100	$100	$100	$100	$100	1	100%
	10	$100	$100	$100	$100	$100	$100	$100	$100	$100	$100	1	100%
											Average	50%	90%

Source: Courtesy David Blanchett, PhD, CFA®, CFP®, https://blogs.cfainstitute.org/investor/2023/04/10/rethinking-outcome-metrics-for-financial-planning/

Here the eye-opening difference between the two measures of retirement funding is the pass/fail rate of 50 percent compared with the goal completion percentage of 90 percent. These are very different perspectives on the same client. Note also the illustrative value of the failure runs. These were obviously not randomly picked by Blanchett. They range from being well underfunded (34 percent of goal) to very well-funded (95 and 96 percent of goal). All of these nuances are lost in the ham-handed pass/fail evaluation approach of classic Monte Carlo modeling.

Finally, Estrada also provides a "risk-adjusted coverage ratio," which uses the mean and standard deviation of coverage ratios to calculate risk-optimized solutions. The formula for the "risk-adjusted coverage ratio" strategy *i* (RAC*i*) is

$$RAC_i = C_{iM}/C_{iSD}$$

Where *CiM* and CiSD denote the mean and the standard deviation of the distribution of coverage ratios for strategy *i*. As Estrada explains, this "risk-adjusted coverage ratio" may satisfy advisors who prefer to provide a single optimized solution to their clients.

SUMMARY: USE COVERAGE RATIOS

In "Retirement Planning: Is One Number Enough?," Estrada illustrates how by moving from the standard chance-of-success measure of retirement funding to coverage ratios or goal completion percentages, advisors will be able to provide context regarding the resiliency of retirement income. This will naturally and effectively segway into deeper and broader client discussions about retirement funding needs, wants, and goals.

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