Weighing the Value of a Variable Annuity

By Kerry Pechter *Tue, Jul 31, 2012*

A VA lifetime withdrawal benefit—especially one with a 'ratchet'—can provide the upside potential and downside protection that many Boomers want in retirement, say researchers Petra Steinorth and Olivia Mitchell. But a life annuity offers a higher dose of "AEW."

How much is a variable annuity worth? For the average person, that would be a hard question to answer, especially in the abstract. Annuity wholesalers, on the other hand, might have to answer that question every time they visit an advisor or a broker.

For scholars Petra Steinorth and Olivia S. Mitchell, that question was the starting point for a rather precise evaluation of annuities, which they document in a new paper, "Valuing Variable Annuities with Guaranteed Minimum Lifetime Withdrawal Benefits" (National Bureau of Economic Research, July 2012).

In the paper, they assess the relative values of three types of annuities: a "ratchet" or "step-up" GLWB, a plain vanilla (no ratchet) GLWB, and a single premium immediate annuity, or SPIA. They use two yardsticks that academics often use to evaluate annuities: the money's worth ratio (MWR) and the annuity equivalent wealth (AEW).

If a person wants to stay fully invested, they found a VA lifetime withdrawal benefit—especially one with a ratchet, which provides the potential to lock in market gains and produce larger payouts—can provide the balance between upside potential and downside protection that many Boomers are looking for in retirement.

But when the three products are judged purely by the amount of *uninsured* wealth a retiree would need to enjoy the same protection from longevity risk that each annuity provided, the SPIA was the most valuable.

"A VA/GLWB combination does offer a higher expected utility than investment only alternative," the authors wrote. "Still, the traditional SPIA appears to be a more attractive product than the VA/GWLB options examined here."

VAs need "standardization"

In an interview with *RIJ*, Steinorth and Mitchell described the thrust of the paper. "Our research shows that variable annuities with guaranteed withdrawal lifetime benefits will be appealing to rational individuals who seek to protect against running out of money in old age. These products are more attractive than holding the same portfolio mix outside the VA/GWLB, due to the fact that people are protected against outliving their assets."

They added, "These products also offer flexibility in that investors can withdraw more than their guaranteed benefit amount if they need to. We show that when people have a "ratchet" in the VA/GWLB – which resets people's account values when markets do well—they are more likely to keep making just the guaranteed withdrawal amount, rather than depleting assets faster. From an industry perspective, this makes withdrawals more predictable.

“A payout annuity offers something that no plain stock or bond portfolio can provide—namely, protection against outliving one’s assets,” the authors wrote. “The VA/GWLBs we explored will be appealing to retirees seeking to balance capital market risk with longevity risk, and we anticipate that many Baby Boomers will find them to be a useful product.

“Nonetheless, the complexity of the product makes it difficult for many to understand. Greater standardization along a few dimensions might enhance their appeal in the marketplace.”

AEW versus MWR

To compare GLWBs and SPIAs, Steinorth and Mitchell hypothesized a 65-year-old man with $100,000 to invest in either a VA/GLWB with a ratchet and a 5% payout, a “plain” VA/GLWB without a ratchet and a 5% payout, and a single-premium immediate annuity with a fixed annual lifetime payout rate of $6,950. The man also had $13,000 in Social Security income.

The authors stipulated that the VA assets would be invested as follows: 48.5% in equities, 22.2% in fixed income securities, 14.7% in balanced/hybrid funds, 11.5% in bonds, and 3.3% in money market assets. In addition, they assumed that the investments would produce an average return, before fees, of 6.75% per year. VA/GLWB all-in fees were assumed to be 333 basis points per year (ratchet) and 308 bps per year (plain).

After a flurry of complex simulations and calculations, Steinorth, who teaches at St. John’s University, and Mitchell, who directs the Pension Research Council at the University of Pennsylvania’s Wharton School, determined the money’s worth ratios (MWR) and the annuity equivalent wealth (AEW) of the three products.

An annuity’s MWR is the ratio between the present value of the expected payments from the annuity (adjusted for mortality rates) and the purchase price of the annuity. An annuity with no distribution or administration costs or adjustment for adverse selection (the tendency for healthier people to buy annuities) would by definition have an MWR of one.

Steinorth and Mitchell determined that a 65-year-old male’s ratchet VA/GLWB (with the asset allocation and performance mentioned above) would have an MWR of 0.90, a plain VA/GLWB would have an MWR of 0.89, and his SPIA, with a $6,950 annual payout, would have an MWR of 0.80. (They noted, however, that SPIAs paying $7,950 a year, as they once did, would have MWRs of 0.90.)

By that measure, a VA/GLWB seemed to offer superior value. The authors then calculated the AEWs of the products. An annuity’s AEW is the amount of money a risk-averse person without an annuity would need in order to feel as secure—to have as much “utility”—as a person with an annuity.

By this measure, the SPIAs appeared to be superior. According to Steinorth and Mitchell, a person would need $107,000 in uninsured assets to feel as secure as he would with a $100,000 plain VA/GLWB, $114,000 to feel as secure as with a $100,000 ratchet VA/GLWB, and $135,000 to feel as secure as he would with a $100,000 SPIA. (They noted that the SPIA AEW would be $165,000 if the SPIA paid $7,950 a year.)

The paper also asserted that:

- The VA/GLWB with the ratchet that they modeled can be a better value than a plain VA/GLWB, at current fee levels. “A ratchet priced at 25 bps is a valuable addition to a VA/GWLB from the consumer’s perspective,” the researchers wrote.
- People who own GLWBs with step-ups (potential annual increases in the value on which the benefit is based during rising markets) are less likely to take withdrawals in the early years of the contract; and to spend the most starting after the 14th contract year.
- People “mostly use the plain VA/GWLB a buffer or last resort to protect against extreme longevity. They take early excess withdrawals to significantly reduce the guarantee base and then rely on the guaranteed benefit after the account value has been mostly depleted or previous investments turned out poorly.”

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