# About those Embedded Derivatives

By Kerry Pechter *Wed, Dec 21, 2011*

*The variable annuity with a lifetime income benefit--sometimes known as an exotic put option or an embedded derivative--was a product that has come back to bite many of the companies that sold it. Was this product ever the best solution for the Boomer retirement challenge?*

The final week of 2011 seems like a suitable moment to ask if the life insurance industry's romance with variable annuities with lifetime income riders has been, on the whole, a net positive or a net negative experience.

The industry's lobbyists insist that VAs currently enjoy the best of times. Indeed, sales rebounded in 2011, as more Boomers entered the so-called retirement red zone and sought what VA riders advertise: downside protection with upside potential.

But so many VA issuers either exited the business in 2011, or curtailed distribution, or announced charges against earnings, or failed to recover enough of their acquisition costs ("DAC unlocking") or reduced their benefits, that it might be described as the worst of times.

It seems reasonable to ask if the GLWB concept was a regrettable experiment in financial engineering, a good idea overzealously sold, a transitional product paving the way for something more sustainable—or perhaps a great idea that fell victim to a Black Swan market?

Those questions lead to more questions: Will companies that left the VA space return to it when markets normalize? Will CEOs shrug off this year's charges against earnings as nothing but margin calls—or will they lose their appetite for VAs?

Will the industry consolidate so much that the survivors can't satisfy Boomer demand? Will issuers de-risk the payout rates and the investment options so much that the product loses its sizzle?

In short, what lies ahead for the variable annuity with a guaranteed lifetime withdrawal (or minimum income benefit), as a solution to the Boomer retirement dilemma?

**Embedded derivatives**

Answering these questions is difficult, and not just because the future remains so uncertain. It's difficult in part because the industry's many players—issuers, intermediaries, and customers—are affected so differently.

Among the issuers alone, there are publicly-held companies and mutual companies, domestic and foreign-domiciled companies, companies with huge blocks of business and others with small ones, etc. Some companies have bigger balance sheets, more diversification and more sophisticated hedging operations than others.

For those who have the skills to read and interpret them, financial statements are good places to seek answers to certain questions—like how badly companies were hurt by market turmoil in 3Q 2011.

Mutual companies do not file SEC documents, of course, but public companies do. They have to report the value of their "embedded derivatives," which is an accounting term for the long-dated options that VA marketers call lifetime withdrawal benefits.

"The guarantee is in effect a put option to the policy holder," an insurance specialist at a major accounting firm explained to RIJ recently.  "For accounting purposes, it gets classified as a derivative. It's essentially similar to the annuitant going out and buying an option on the market. And it has to be 'fair valued.' During times of economic stress, when the account value starts going down, the guarantee becomes more and more valuable."

These valuations are buried in the 10-Q statements that VA issuers filed. Sometimes they're dismembered and the parts are buried in several locations, the accountant said. That can makes it difficult to assess the damage.

At The Hartford, for instance, which still has $66.7 billion in VA assets under management but added only a cautiously meager $194 million in sales in the third quarter of 2011, the losses on its book of VA business seemed significant—but it's hard to tell.

Under the Fair Market Measurements on The Hartford's 3Q 2011 10-Q, the company's VA hedging derivatives and macro hedge program was valued at $1.7 billion and the amount reinsurance recoverable on its living benefits was listed at $3.0 billion. In the liability section of the same table, a negative value of $5.9 billion was reported for living benefits.

A later page in the 10-Q said that, "As of September 30, 2011, 63% of all unreinsured U.S GMWB 'in-force' contracts were 'in the money' … the ultimate amount to be paid by [Hartford], if any, is uncertain and could be significantly more or less than $3.2 billion."

That sounded like a lot, but subsequent language made the immediate pain sound milder, though significant: "In the third quarter, Hartford reported a $118 million net pre-tax realized loss on its U.S. GMWB liabilities (net of dynamic and macro hedging programs) and a $247 million charge resulting from a loss on GMWB-related derivatives."

The 10-Qs of other major VA issuers were just as intriguing—and just as hard for a layperson to interpret or evaluate.

At MetLife, the latest 10-Q seemed to show that hedges had protected the company against the rising in-the-moneyness of its guaranteed minimum income benefit, which is an option to annuitize a protected amount.

"The favorable change in net derivative gains of $2.9 billion" over the previous year "was driven by a favorable change in freestanding derivatives of $4.4 billion which was partially offset by an unfavorable change in embedded derivatives of $1.5 billion primarily associated with variable annuity minimum benefit guarantees," the MetLife 10-Q said. It looked like MetLife's risk management strategy was working.

The 10-Q filed by Prudential, which traded places with MetLife as the top seller of VAs in 2011, also showed a positive balance on its hedging and embedded derivatives positions, but mainly because of NPR, or non-performance risk—a factor related to Prudential's overall financial strength and ability to pay its bills.

"As of September 30, 2011, the fair value of the embedded derivatives in a liability position was $8.9 billion," the quarterly report said (p156). "The cumulative adjustment for NPR was $5.7 billion, which decreased these embedded derivative liabilities to a net liability of $3.2 billion as of September 30, 2011."

In a table on the same page, however, the change in the fair value of the embedded derivatives was [negative] $8.1 billion and the change in the fair value of the hedge positions was a positive $4.9 billion. But because of NPR, it ended up, all told, $1.295 billion to the good.

Despite those positive numbers, Prudential's "adjusted operating income for the third quarter of 2011 included $435 million of charges from adjustments to the reserves for the GMDB and GMIB features of our variable annuity products and to amortization of DAC and other costs, compared to $412 million of benefits included in the third quarter of 2010," the 10-Q said. (p. 147).

The accountant quoted above told RIJ that these numbers (or "valuations") would probably change in the long run but that they could cause pain in the short run.

"As markets improve, [these losses] could reverse themselves, and hopefully they will," said the accountant quoted above," he said. "In theory, if they got number crunching right, they should come out ahead, but at any given point in between, they are asked to measure liability as though it could all be invoked today.

"There's no way to prove otherwise, so the you book the liability based on current best estimate," he added. "It's an 'accounting blip' only if you believe the market will reverse itself. In the meantime, it potentially puts them in a position where they may have to bolster their capital or cut back on sales because they don't want any more of that liability."

**Share prices**

Compared to the forest of numbers in the SEC filings, the share prices of life insurance companies are much easier to interpret. Those prices have trended steeply downward this year—more steeply than the overall market averages.

Indeed, life insurers have experienced an angry bear market in 2011. Losses in market capitalization have been massive at MetLife (-32%) and Lincoln Financial (-36%), and merely serious at Prudential Financial (-16%).

But what role does VA in-the-moneyness play in those low valuations, either as cause or effect? Not nearly as much as macroeconomic conditions overall, says Steven Schwartz, a Chicago-based life insurance analyst for Raymond James in Chicago.

"Even the life insurers that don't sell variable annuities have low share prices," Schwartz told RIJ. "It's macro stuff that's driving the valuations. By that I mean the low interest rates, which are driven by a flight to quality, by Europe's problems, and by Operation Twist. Low rates aren't going to kill anybody, but it will certainly slow down earnings growth."

Variable annuities, whose guarantees are collateralized by equity values and whose hedging programs cost more when interest rates go up just happen to be one of the products most adversely affected by current market conditions, Schwartz added. Other products in that category are secondary guarantee universal life and long-term care insurance.

"Lincoln Financial is probably the best example of that," he said. "It is a major player in variable annuities and secondary guarantee universal life. But all the life insurers are all down, and that reflects investor fears that rates will stay where they are for a long time."

Sharing the life insurance industry's own view, Schwartz believes that demographics and risk aversion still favor the variable annuity issuers.

"The demand for variable annuities remains very strong. The cost of riders has gone up and the guarantees are less attractive than they were, yet there is such a high amount of risk aversion in populace that sales will remain strong and most sales still include the income riders," he said.

"At some point the numbers could work out that the product is just not that compelling," Schwartz conceded. "But people have to do something with their money, and a five-year CD isn't compelling, a fixed annuity isn't compelling, the stock market isn't compelling and 10-year Treasuries at 1.8% aren't compelling. Nothing is historically compelling."

**The future of VAs**

Going forward, VA watchers expect certain things. They expect companies that have dismantled their variable annuity wholesaling networks to have difficulty re-starting them at some future date. They expect the industry to continue to consolidate. They expect contracts to promise less and shift risk onto the contract owner. Some expect the retrenchment of the VA to create opportunities for non-annuity solutions.

For VAs specifically, the big trend is risk reduction. To use an automotive comparison, the VA will be less like a big-finned, fuel-guzzling 1959 Cadillac Eldorado and more like a 2012 Subaru with front, side and rear airbags and a five-star crash rating. This trend is well underway.

VA issuers "are all trying to reduce some the risk that comes from volatility, either through constant volatility funds or CPPI [constant proportion portfolio insurance]," said Ryan Hinchey, an actuary who recently launched NoBullAnnuities.com. "We're rounding that corner and there's no way companies can stick around without taking those risk management measures.

"To protect themselves from the DAC [deferred acquisition cost] issue"—that is, the danger of advancing generous incentives to brokers and advisors—"companies have gotten away from the B share product. There's also been some innovation aimed at managing that risk by having the consumer pay premium-based rather than account-based fees," he added.

In writing put options on the securities markets, insurers revealed a bit of naiveté, Hinchey acknowledged. "Companies underestimated certain risks. They placed guarantees on mutual funds, for instance, when they knew that they could only use hedge instruments that mimic index funds," he said. "When companies were running their own Doomsday models, they weren't taking that into account. But it's still a young product, and over time companies have figured out how to better manage the risks.

"Certainly the product will be a lot tamer in the future, especially with the constant volatility funds. There will also be a heavier focus on index funds that are easier to hedge, and companies won't get too crazy with the roll-ups. Low interest rates will certainly make it a lot tougher to offer roll-ups," he predicted.

"Fringe players will continue to disappear. But going forward, I think some of the bigger issuers feel confident that they've finally gotten it right. Sometimes you need the experience of getting hit hard and having to figure out how to get it right the next time."

VA sales might fall in the near future, he said, but not dramatically. "I don't think sales will drop to half of the current $150 billion a year," he said. "But the products will be different and more conservative. I expect to see a reshuffling of the top few players. I expect MetLife and Prudential to scale back," he added.

In the long run, will the product be a mainstay for retired Boomers, or will it play a niche role in generating lifetime income? Perhaps the GLWB's appeal was built primarily on claims and promises—of liquidity, guaranteed lifetime income, rising payouts, a legacy for one's heirs, generous commissions for advisors and big profits for shareholders—that are unrealistic in any environment other than a raging bull market?

In other words, was the product, in its past incarnations at least, a failure, and will it fail to be the 'killer app' for Boomer retirement?

To couch the GLWB in such terms is to create a straw man, countered Tamiko Toland, who covers variable annuities as managing director for Retirement Income Consulting at Strategic Insight. She sees the VAs' difficulties as part an evolution in retirement income solutions rather than as a defeat.

"The GLWB never was a 'killer app,' though it may have looked like one under certain market circumstances," Toland told RIJ. "I think the GLWB is just one of an emerging suite of product solutions that will meet consumers' needs in different ways. The companies that intend to stick with this market are the ones that have a vision of a future that is not defined by GLWBs—or at least not by the products as they look today.

"Retirement income protection is still a very valuable service to provide, but a boom lulled people into thinking that they could have their cake and eat it too. That was *never* true of GLWBs, even in the best of times, though it wasn't evident to everybody. Maybe this is a bit of a reality check."