

When does 6% equal 3.7%?

An analysis of a common variable annuity guarantee

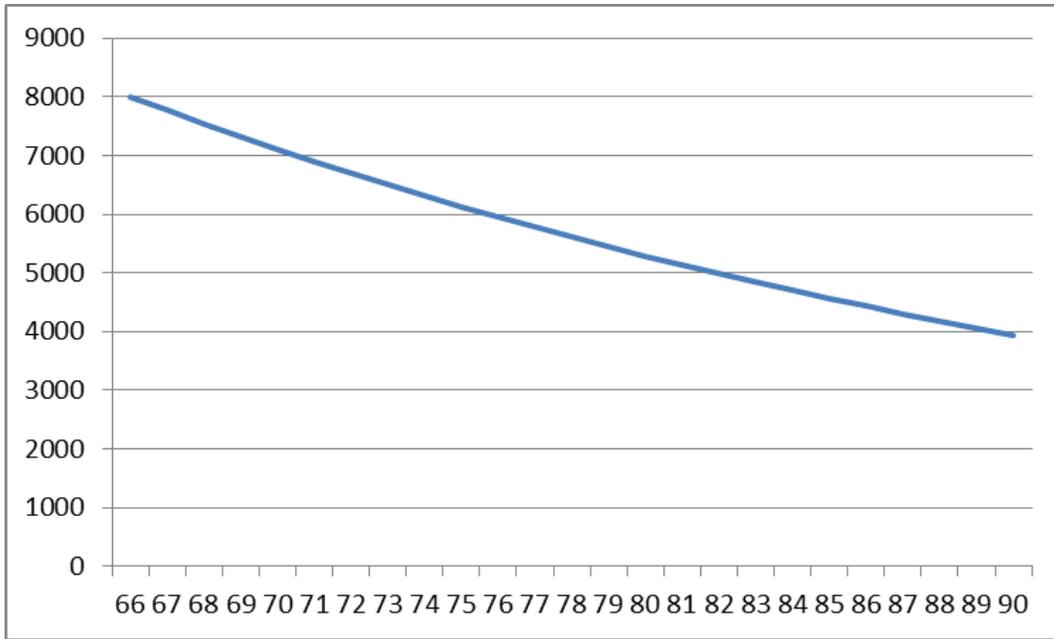
Variable annuities can make some unbelievable promises that, when closely analyzed, often turn out to be false.

Many products tout an annual bonus or guaranteed annual return of say 6% or 7%. I've seen them as high as 8%. Generally, these guarantees are for the first ten years of the contract. What many annuity buyers appear to miss (probably because it's never explained to them during the sales presentation) is that these returns are applied to the annuitization value or guaranteed lifetime withdrawal benefit value. The contract buyer does not own these values and can't cash them out. They are only used to determine the annuitization or lifetime withdrawal amounts. Running parallel to these values is the actual account value that you do own and can cash out. The "real" account value is invested in mutual funds that follow the ups and downs of the market. Annuity contracts are very expensive; the average annual expense being around 2.5%. In contrast, someone could invest through a Vanguard mutual fund at an annual cost of 0.05% to 0.4%; a fraction of the annuity cost. So, as in investment, these contracts won't work for the simple reason that they will have a tremendously difficult time keeping up with market returns when they are starting off with a 2.5% expense. Rather, it's the guarantee that *may* have some value.

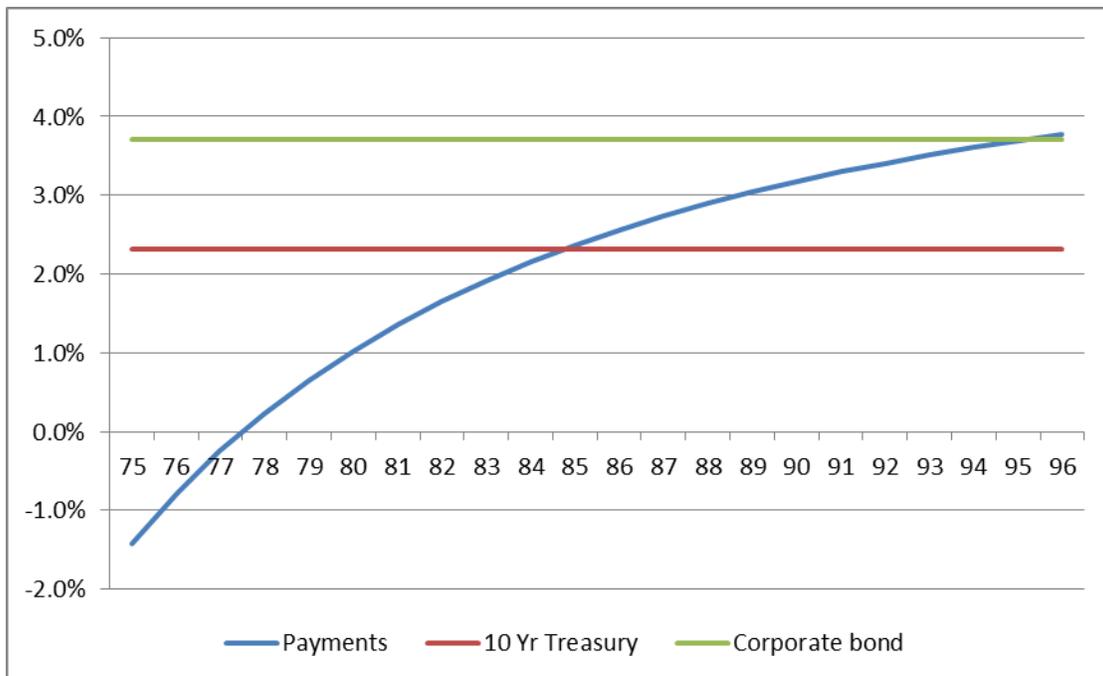
Here's how a guaranteed 6% return turns into 3.7%: One particular contract promises a 6% "*annual bonus that keeps your protected balance growing when the market is down or flat*". The bonus is only for the first ten years. The fine print (if read) would alert the prospective buyer that "*the protected balance is not a cash value and not available as a lump sum*". The bonus is 6% of the initial premium. If you invested \$100,000, in ten years the protected balance would be \$160,000 = \$100,000 + (10 years x \$6000). Stop here for a minute. The annual, compound rate of return required to increase \$100,000 to \$160,000 over ten years is only 4.8%. So, right away, the 6% appears to be fictional.

After ten years the contract owner can take lifetime annual withdrawals equal to 5% of the \$160,000 protected value or \$8000 per year. It's important to note that these withdrawals reduce the balance of the account that you do own on a dollar for dollar basis. However, the \$8000 payments will continue as long as you live, even if the account balance that you own reaches zero.

This \$8,000 annual withdrawal does not increase with inflation; so each year it will buy less. The buying power of an annual \$8,000 payment in the face of 3% inflation is shown on the graph below. Age is on the horizontal axis.



To accurately determine the value of these payments in comparison to the \$100,000 premium we have to calculate the “internal rate of return” (IRR) of this cash flow. The IRR is the return that makes the cumulative payments equal to the premium. That return (IRR) is shown on the graph below where it’s assumed that someone makes a \$100,000 premium payment at age 55 and starts an \$8,000 annual withdrawal starting at age 65.



First, note that the payment return curve equals 0% at age 77. This means that the insurer has simply metered the \$100,000 premium back to us. By age 85 the \$8,000 annual payment has provided the

retiree with a 2.3% return which is the current return on the ten year US Treasury bond. In other words, the retiree could have created this income stream simply by investing in US Treasuries which she could purchase directly from the Treasury without cost or commission. Finally, by age 96 the payments have provided an investment return of 3.7% which is the current interest rate on Vanguard's corporate bond mutual fund. Again, the retiree could have produced these payments by buying into that fund which has a very small 0.10% expense.

These low returns should be expected. The insurer would have to take stock market risk to actually provide a 6% return. But, they can't take that risk because they must make the lifetime payments that they promise. From 2000 to 2015 a portfolio of 60% stocks and 40% bonds only delivered an annual return of 5.3% and that portfolio declined 20% in 2008. So, it would have been impossible to deliver 6% to an account that you could cash out. Insurers will invest your premiums in bonds that will mature as the payments to their annuitants become due. This is why you can only expect to get bond like returns from these contracts.

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