How (and why) indexed universal life really works

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If a life insurance company can afford such generous caps and floors in their IUL policies, why can't private investors do the same?

We are often asked by our clients, “How can the insurance company afford such generous caps and floors in their indexed universal life policies?” Many insurance producers themselves may ponder the same question.

We may even take it a step further and wonder, if the insurance company can do this in a life insurance policy, shouldn’t we be able to do this in our own investment portfolios without the insurance fees associated with the policy? Before addressing the later, we need to understand how the insurance company hedges to be able to offer their stated caps and floors.

As an example, we’ll assume XYZ insurance company offers an indexed universal life with a one-year point to point crediting strategy on the S&P 500, a 0 percent floor and a 12 percent cap with a 100 percent participation rate. What this means is that if a policy begins the year with $100,000 of account value, it is guaranteed to end the year with at least $100,000 in account value and possibly up to $112,000 (less insurance charges and policy fees in both cases).

Now, let’s assume that XYZ has a general fund that they know will earn 5.5 percent interest this year (which is about the industry average). The insurance company would need to have $94,787 of your $100,000 invested in their general fund at 5.5 percent in order to guarantee your $100,000 account balance at your policy anniversary. This leaves them with $5,213 to invest in an option strategy to credit the upside potential of the market. The insurance company uses call options to credit the excess interest.

A call option is a security that gives the purchaser the right to buy a security at a specific price (strike price) within a certain time period. Since this policy is linked to the S&P 500, the insurance company will buy call options on an ETF that mirrors the S&P 500. Spiders (SPY) is one such ETF.

At the time of writing this article, SPY is trading at $200. If the S&P index rises 10 percent, shares of SPY will also rise 10 percent to $220 ($200 x 1.1). Since the insurance company will need to credit at least some interest if the S&P index rises at all, they need to buy one-year call options with a strike price equal to the current price of the underlying security. This is called an “on the money call.” As long as the index is up by year end, these options will be “in the money.” The insurance company will liquidate the options and in order to credit excess interest to the policy. If the S&P index falls, the options will be worthless, but the money that was put in the insurance company’s general account will now be worth $100,000.

Currently, the price of a one-year on the money call on SPY is $13.22. This means that for a premium of $13.22, the purchaser will have the right to purchase one share of SPY at a price of $200 until the option expires one year later. If, a year from now, SPY is trading at $250, the option would be worth $50, as it allows the purchaser a $50 discount to the current price. If the underlying stock is trading at $300, the option would be worth $100. Since there is no limit how high the price of the underlying security may go, the call option offers unlimited profit potential. If the underlying security is trading below the strike price (in this case, $200) the option would be worthless and the purchaser would have lost the premium paid.

While the profit potential of a call option is unlimited, the insurance company does not need unlimited profit potential since they are only on the hook to credit your policy up to the cap, in this case, 12 percent. At the time of the call option purchase, the insurance company will also sell an “out of the

money" call option with a strike price higher than the current trading price. Option traders refer to the strategy of buying an on the money call and simultaneously selling an out of the money call with both positions having the same expiration date as a "bull call spread. The purpose of using a bull call spread is that the net cost of the option strategy is lower and more options can be purchased. It also caps the upside potential of the position.

A bull call spread consists of one call option purchased on the money and the simultaneous sale of an out of the money call option on the same security with the same expiration date. This strategy caps the potential return of the long position but reduces the net cost of the option.

In our example, using a 12 percent cap, the insurance company will sell call options with a strike price 12 percent greater than the "on the money" price of $200, in this case, $224. Unfortunately, SPY calls are not available at a price of $224, so I will need to round up or round down to come close. In this case, I will use a strike price of $225.

Currently, a one-year call option on SPY with a strike price of $225 would sell for $2.80. The net cost of the spread will be the price paid for the call purchase (long position) less the price received for selling the call option (short position). In this case, $10.42.

$13.22 (long position)
-$2.80 (short position)
$10.42 Net cost of bull call spread

As stated earlier, in our example the insurance company has $5,213 available to "play" the option strategy. At a net cost of $10.42, the insurance company will be able to buy approximately 500 spreads. Let's assume that over the next 12 months, the index earns 10 percent. The insurance company will need to credit your policy with $10,000 of indexed interest. At 10 percent growth, SPY will be trading at $220 and each 200 call will have an intrinsic value of $20. Since the insurer owns 500 of these call options, their long position is worth $10,000. Since SPY is trading below the short position, the short position will simply expire. In this case, the insurer is perfectly hedged for the caps and floors they are offering.

It is nearly an impossible coincidence that these numbers worked out so perfectly, as I arbitrarily picked the cap, floor and general account interest rate. In reality, option prices change daily and if we ran this same analysis a week or a month from now, we would likely get different results. But as long as the strategy comes close, we should have a degree of comfort that the insurance company is not over-promising.

Since all insurers purchase their options at the same exchange and at the same price, how can caps and floors be different amongst different carriers? For instance, suppose ABC is offering a similar policy with a 13 percent cap. Is that insurer over-promising? It may be that the ABC is earning a higher rate in its general account. Suppose ABC has a general account that is earning 6 percent instead of the 5.5 percent we assumed with XYZ. ABC would need to have $94,340 of the client's account in the general account, leaving $5,660 available to play the option strategy versus XYZ's $5,213. With more money available for the option strategy, ABC could offer a higher cap or a higher floor, or perhaps a combination of both. It is also possible that one company's internal fees and expenses are greater and the increased fees could also allow more generous rate caps.
Now that we have an understanding of how the insurance companies invest, let's see if we can achieve similar results in our own investment portfolio …

We need to start by finding a safe place to deposit enough of our money so that it one year later it will be worth what we started with. In the previous example, the insurance company did this by putting $94,787 in their general account, earning 5.5%. Unfortunately, we as individual investors do not have access to such high rates for "safe money." As individual investors, we would probably look for a one-year certificate of deposit or an investment grade zero coupon bond.

At the time of this writing, the highest yield to maturity zero coupon bond with a one-year maturity yields about 2 percent. Unlike an insurance company, as an individual investor, I will have to pay income tax on the 2 percent. Assuming a tax rate of 40 percent (federal and state), my net after tax yield on this 2 percent bond will be 1.2 percent. This means that I will need to have $98,814 invested in this bond in order to have my initial $100,000 one year later. This, of course, leaves me with just under $1,200 to invest in my call spread strategy in order to participate in the upside of the market.

Assuming I purchased the same bull call spread as the insurance company did in our previous example, I would only be able to afford to purchase 115 options versus the 500 options the insurance company was able to buy. Since my option holdings are approximately one-fifth of that of the insurance company, my return on the option strategy will be one-fifth of that of the insurer. In a year when the insurance policy would have credited 12 percent interest, my portfolio would have only credited about 2.5 percent. In a year when the policy would have credited 5 percent, my portfolio would have only earned about 1 percent.

Adding insult to injury, my option gains would also be taxable as a short-term gain. Again, assuming a 40 percent tax rate, my 2.5 percent and 1 percent return would be chopped to 1.5 percent and 0.6 percent respectively.

An astute student of options might suggest an alternate strategy called a collar. A collar strategy is one where the investor buys a security and then buys an equal number of put options with a strike price equal to the price he paid for the underlying stock. The put will then guarantee no loss of principal if the underlying security declines in value. The investor would then sell call options on the underlying security to offset the price of the put.

Let's see if such a strategy would work with SPY. If I started with $100,000, I would be able to purchase 500 shares of SPY at $200/share. In order to fully protect my $100,000 investment, I would need to purchase 500 one year put options at a current price of $15.82. If I were to pay for the puts by selling calls, I would need to find the strike price of a call option approximating the price I paid for the put. Scanning the call option prices, I see that I could sell 195 calls at $16.08/share. Selling 500 call options would not only pay for the puts, I would come out about $130 ahead. But my 500 shares of SPY would be immediately called away at a $5/share loss, making my net return of the strategy -2.5 percent.

The bottom line is that after taxes, an individual investor would not even come close to matching the guarantees and caps of an indexed universal life policy on a gross basis. Keep in mind that gross returns on any life insurance policy will be reduced by the insurance charges and fees charged against it. These fees can vary dramatically from issuer to issuer and are also affected by policy design. Consumers will need to judge for themselves if these fees are justified by the higher gross crediting rates.