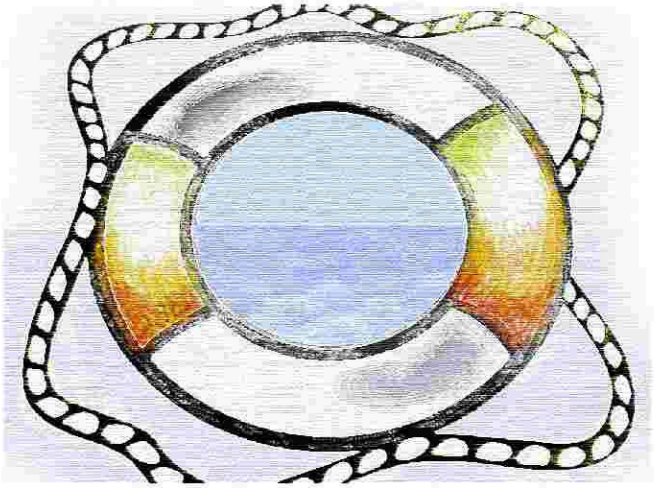
Variable Life Illustrations and the Problem of Stock Volatility

By Peter Katt



Variable life insurance has various equity and fixed-income subaccounts from which policyowners select for the investment of their policy's cash values.

A life insurance policy investment strategy that uses primarily fixed-income instruments is best done via whole or universal life. On the other hand, variable life policy expenses are high compared with whole life and universal life, so with variable life it makes sense to predominately select equity subaccounts, to reach for higher investment returns to recoup the higher expenses.

Yet that selection presents a serious problem, because returns for equities are volatile and unpredictable, with years of large gains and losses. This combination of equity volatility and life insurance is a very bad mixture that I have written about on three prior occasions.

Illustrations: Too Opaque

Insurance agents and buyers get their primary understanding about life insurance from illustrations provided by the insurance company. These illustrations are supposed to give a purchaser an indication of the premium payments he will be making over the life of the policy, and the projected death benefits over the life of the policy, but they are based on certain assumptions: The illustrations show how a policy is projected to perform based on the premium pattern shown and pricing factors that remain constant throughout the illustration.

However, the most important pricing factor is the investment results from the underlying subaccounts in which the cash values are invested. If most of these subaccounts are invested in equities, these illustrations simply do not reflect equity volatility, because they require the use of constant yields (for equities, this is really a constant return but "yield" is the term used in the illustration) throughout the illustration.

In addition to a constant yield that can be as high as 12%, illustrations are required to show a 0% yield. However, my impression is that showing a 0% yield is so foreign to our investment-view that it is utterly ignored by sellers and buyers and serves no purpose whatsoever.

Equity volatility does not impact all variable life insurance policies equally. Much of the impact depends on the type of death benefit that the policy is designed to provide.

There are two types of death benefit designs that can be used with variable life insurance policies:

- One has level death benefits from the time of purchase until the policy matures;
- The other has low initial death benefits relative to the intended premiums, with death benefits expected to rise or fall as investment results are booked. This second

death benefit design we might think of as a superfunded policy.

For the level death benefit design, the presale illustration is supposed to inform buyers of the premiums needed to maintain a level death benefit policy. But the premium costs shown in the illustration are not likely to conform to reality—they are an illusion because of investment volatility. In reality, the investment subaccounts will not produce a constant "yield" year-to-year, but instead will vary greatly—resulting in premium costs that will substantially differ from the illustrations. The policyholder may then be faced either with coughing up substantially more premium dollars than expected or with policy failure.

[My November 2001 column ("Variable Life Insurance Policies and Stock Market Volatility") focused on the need for a premium management system to handle this volatility for policyowners who insist on using level death benefit variable life insurance designs. Even in my own professional hands, managing premiums for level death benefit variable life insurance policies is challenging.]

Unfortunately, almost all sellers of variable life insurance haven't the vaguest notion of how inaccurate their illustrated premiums are. This misunderstanding is passed on to buyers, who bond with these premiums that have no chance of being right—and who usually don't reassess this situation until disaster is about to strike.

Simulations: More Clarity

In order to show how misplaced this loyalty to the illustrated premium really is, last year we began routinely running sophisticated simulation-testing to determine the chances a variable life insurance policy will fail if the illustrated premium is followed. We used Monte Carlo testing, which is a statistical technique that uses random numbers to simulate a particular phenomenon—in this case, gross annual investment results funding a specific life insurance policy—over and over again so that we are able to make an educated assessment about the likelihood of particular events occurring.

In order to test variable life insurance policies, we extract the tested policy's mortality and expense components, as well as its premiums, and apply an appropriate arithmetic average investment return with a standard deviation, a measure of investment volatility [the higher the standard deviation, the greater the volatility]. For example, the average annual return for stocks from 1926 to 2003 was 12.4% with a standard deviation of 20.4%. For each test, 1,000 scenarios are run using random investment results based on the defined investment average and standard deviation.

Our test results are fascinating. For one level death benefit variable life policy that we tested, we found that the probabilities of policy failure were 20%, 35% and 48% if policy premiums were maintained at the illustrated levels for average constant account yields of 12%, 10% and 8%, respectively.

Further, we found that to prevent policy failure, the average additional premiums needed would be as high as $250,000, $450,000 and $600,000!

This analysis clearly shows the importance of a premium management system. (Specific examples of variable life insurance policy premium management are found in my November 2001 column available in the AAII Journal area at AAII.com.)

Superfunded Policies

Equity volatility can also cause problems for superfunded policies, and simulation testing is also invaluable in assessing these policies' potential advantages and disadvantages.

As an example, Tom's irrevocable trust has an income-producing asset that is used to superfund two life insurance policies (i.e., policies that have increasing death benefits). One is a whole life policy and the other is a variable life policy.

Tom had two questions:

1) If more income than had been planned was available, would he be better off investing the additional funds in whole life or variable life?, and
2) Should he consider replacing the variable life policy with another whole life policy? The whole life policy's general portfolio has about 20% equities and 80% fixed-income instruments, but its investment component of the dividend cannot produce a loss to the policy's cash values. Variable life insurance investing is 100% equity subaccounts.

With respect to the first question of probabilities for investing the additional funds this year, we found that there is a 65% chance that greater value will be provided by the variable life policy with 100% equities. But we also found there to be a 7% probability, by life expectancy, that the variable life policy would fail.

As to the second question about whether it would be better to replace the variable life with another whole life policy (in a way that would keep selling expenses at a minimum) we found that the variable life policy had a 53% probability of producing better value, but a 10% probability of complete failure. (There is a higher chance of failure in the second question because it assumes that an additional investment to the variable life policy isn't made and, therefore, there is a lower level of funding.)

A 7% to 10% chance of failure with a superfunded variable life policy is an extraordinary possibility and one that is not widely understood by variable life policyowners.

Negative Synergy

During our discussion of the results, Tom wondered how the trust's variable life investment could go down to zero. But his thinking was based on equity investments not associated with variable life.

Equity investment volatility within life insurance has a negative synergy. The greatest internal expense of life insurance is the actual insurance cost, which is computed using the net amount at risk

figure. "Net at risk" is the difference between a policy's death benefit and its cash value—if the death benefit is $5 million and cash value is $2.5 million, the "net at risk" is $2.5 million.

For a 75-year old male, the cost of insurance is $60,000 with $2.5 million net at risk. But let's say the cash value drops 30%, making the cash value $1.75 million and the net at risk $3.25 million. This increases the cost of insurance to $78,000. In other words, the equity volatility has not only caused the cash value to go down, but it has also forced the policy's costs to go up 30%.

This is why even a superfunded variable life policy can completely fail.

Of course, the negative synergy of a lower investment base, combined with higher incurred costs, is far worse for level death benefit designs, with chances of policy failure dramatically higher.

Simulations vs. Illustrations

Two current misconduct cases illustrate the advantages of simulations over policy illustrations. Both deal with insurance agents replacing whole life policies with variable life policies because of representations that the policyowners could have higher death benefits with lower costs.

In both cases, the representation was to transfer only the whole life policy's cash values to fully fund the new variable life policies with no further premiums needed. In both cases, a 12% constant yield was illustrated for policies with level death benefits. Both have come apart because of significant stock market declines a few years after the transactions.

Simulation testing, using historical data from 1926 to the time each variable life policy was purchased, shows that there was a 65% chance of policy failure in one and 55% in the other. However, in each case the agents dutifully illustrated the required constant yields (12% and 0%).

It is hard to imagine a better tool for assessing the risk/reward balance of a specific financial transaction and to define investor suitability.

A tremendous number of variable life policies are currently underwater or have a significant chance of going under, and policyowners don't realize it.

Simulation testing discloses the dramatic effect equity volatility has on variable life policies. Beware of anyone who attempts to convince you otherwise using policy illustrations alone. ▲

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