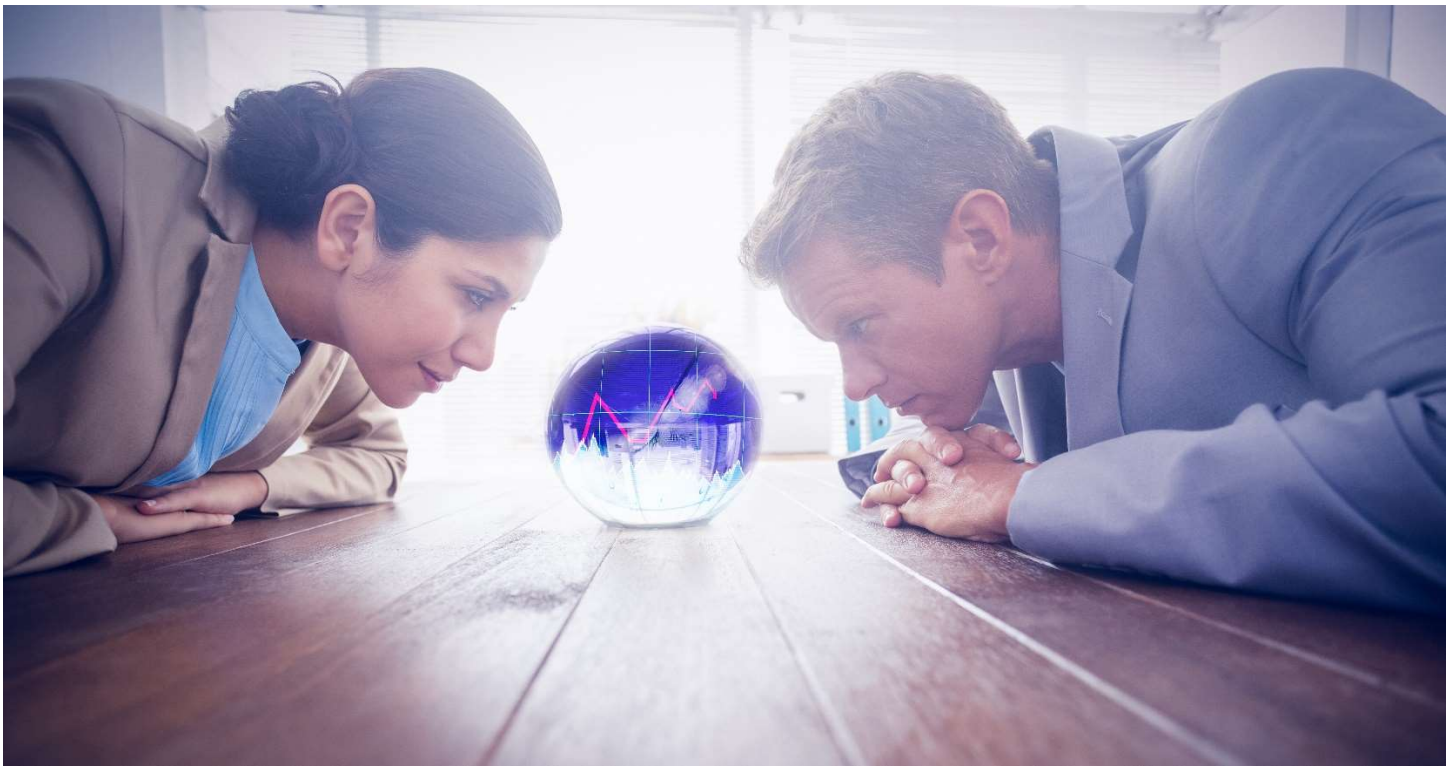
Life Insurance Sustainability Testing Solves the Illustration Dilemma



You've misplaced your crystal ball! How else can you get a realistic view of the future? The seller (and buyer) of a current assumption life insurance policy will find Stochastic Analysis the next best approach to setting client policy expectations. Also known as "Monte Carlo" analysis, it can complement the producer's and the client's understanding of the dynamics of flexible premium products – especially VUL and IUL. Insurance companies use similar tools to estimate profits expected from new products, but the tools are not offered to insurance buyers for realistic insight about how their policies are likely to work. To get this help, there is now LISA – Life Insurance Sustainability Analytics – designed especially for producers and planners to test IUL and VUL illustrations with volatility analysis that assigns probabilities to life insurance outcomes. To our knowledge, it is the only toolset of its kind commercially available, and it is a game changer…

Written by the Life Insurance Analytics team.

Life Insurance Sustainability Testing Solves the Illustration Dilemma

Setting the stage

Most in the life insurance "space" are aware that NAIC's 1995 Life Insurance Illustration Model Regulation produces policy illustrations that are unable to provide consumers or their agents and advisors with realistic insight and disclosure as to how IUL and VUL policies may perform "in the real world." Neither the upside opportunities nor the downside risks of these policy types are adequately demonstrated largely due to the use of constant crediting rate assumptions in the calculation of projected values. Along with the reality that cash value credits (or debits) change daily (VUL) or with the duration of the segment (IUL), just as troubling has been the inability to demonstrate the impact of insurance company changes to the non-guaranteed elements described in these current assumption universal life policies.

In the last 10 years or so, the industry has witnessed IUL Cap and Participation rates trend lower, strategy charges trend higher, and even future cost of insurance rates applied to in-force policies have been increased by many prominent insurers. These unilateral changes made to in-force policies often undermine clients' objectives and challenge the purpose for why these policies were bought in the first place. The long-term benefits of tax-free retirement income and future expected death benefit amounts have been severely impacted. This has led to industry-wide loss of trust, complaints, and even lawsuits alleging agent and carrier negligence.

Given the inherent volatility of IUL and VUL policy performance vis a vis the original sales illustration, the ability of the insurance companies to change non-guaranteed elements, and the inability of the policy illustrations to demonstrate the impact on the client's future expectations, the need for point-of-sale and on-going real-world analysis of these policy illustrations couldn't be more important.

Life Insurance Sustainability Analytics (LISA) provides a commercially available volatility and non-guaranteed assumptions assessment of IUL and VUL life insurance policies. LISA provides an excellent means to conduct pre-sale proposal testing and refinement, as well as active management of in-force life insurance policies with its interactive and benchmark testing of policy illustrations.

How Did We Get to This Policy Illustration Dilemma?

Since the nearly simultaneous introduction of indeterminate premium universal life insurance and the desktop computer, we have been struggling to manage client expectations. Consider that interest rates credited in the early days of UL were double digit (15% was not uncommon!) and were projected in ledger-style illustrations at that constant rate for the life of the illustration. The current crediting rate, held constant in the illustration, was the basis for solving for the lowest planned premium to sustain the ledger targeting $1000 cash value at age 95 or 100. This presented one improbable level-rate scenario out of millions of fluctuating rate possibilities, but was provided to consumers on paper implying it was 100% sustainable to maturity. Policy owners might have wondered if it was an average, conservative or optimistic representation, but all are scenarios that failed long ago. An amusing anecdote: Product support specialists at the time were often encouraged to be "conservative" by setting the assumed constant rate for the ledger at 1% less than the current rate - which may have been 15%! Fast forward to the 2000s when interest crediting rates on inforce UL policies bottomed out at the guaranteed minimum and have generally remained there. You know the rest of that story.

By the early 1990s, lower current assumption UL crediting rates shifted the sales focus to Variable UL products that could potentially illustrate more favorably. Variable UL was attractive with its illustratable 12% (gross) crediting rate, and then after the 2008 shock to the economy, Index UL emerged as a "safer" alternative to VUL.

But actual credits to VUL and IUL cash values will always be different than illustrated with an assumed constant illustration rate, as underlying policy credits depend on "the market," either directly with VUL or by reference in IUL. While these comments are not intended to suggest a preference for any particular form of "permanent" life insurance, we note whole life policies are based on fixed, guaranteed premiums and guaranteed cash values, and the described VUL and IUL illustration challenges are largely eliminated.

Further, the NAIC Illustration Model Regulation, debated for years leading up to its 1995 adoption was designed to address current assumption products in a manner (presumably) compatible with fixed life insurance products. But it was finalized years before Index UL became popular. It also excluded Variable products from the Regulation. Since the Regulation's focus was on "original flavor" UL with carrier-declared crediting rates (and a guaranteed minimum rate), the

regulation required illustrations to use a crediting rate no higher than the current declared rate. Index UL has never fit in the regulatory regimen since the key non-guaranteed interest crediting mechanism is exposed to an external index rather than a declared crediting rate. AG 49, adopted in 2015 and updated a few times since, has attempted to limit how high the crediting rate can be. But what hasn't changed is that it is still applies a lifelong constant rate in the illustration while the product continues to experience volatility. Agents and policy owners are no better prepared today than they were nearly 30 years ago in setting expectations when all they have to work with is an insurer's constant rate illustration on which to base their long-term expectations.

This is the dilemma of all current assumption policy Illustrations (not just IUL). The purpose of the 1995 Illustration Model Illustration was *"… to protect consumers and foster consumer education … [and] the goals of this regulation are to ensure that illustrations do not mislead purchasers of life insurance and to make illustrations more understandable …"*

Unfortunately, the very nature of constant rate cash value accumulation assumptions often misleads the consumer into underestimating the true cost of a life insurance policy intended to last a lifetime while overstating the potential policy loan benefits that could produce "tax-free retirement income" in later years. This is especially true when the buying approach of the consumer seeks a "best/lowest" premium that will be calculated based on constant crediting rate assumptions and unchanging scales of non-guaranteed expenses, especially COI. Finally, policy illustrations are often used by agents and consumers as reliable projections of values, notwithstanding the NAIC's stated purpose and goal for the consumer.

In other words, while the regulation has succeeded somewhat in differentiating guaranteed from non-guaranteed elements, it has failed in that illustrations are relied upon as a projection of values – and potentially perceived as part of the policy (and its guarantees). Further, it fails to give an indication of the impact of changes to non-guaranteed elements such as cap or participation rates that are critical to the actual crediting of the policy.

While there has been some discussion at the NAIC to review and revise the nearly 30-year-old illustration regulation – focusing on the impact of volatility in life insurance illustrations - we are left for now with illustrations calculated at a constant rate. This creates an illusion of favorable future projections and an expectation of policy performance *that is never going to happen!*

Ironically, where insurance is meant to transfer the burden of financial loss to an insurance company in exchange for the premium paid, current assumption/indeterminate premium policies (i.e., all forms of UL) force the buyer to retain the risk of sustaining the policy. Licensed agents AND non-licensed financial advisors are left searching for a way to effectively manage and test their client's life insurance policy plan expectations – which the existing policy illustrations cannot do.

It is critical to point out that the illustration gives the false impression of 100% sustainability (unless it was intentionally designed to lapse before maturity). Unless the regulation changes, we are not permitted to modify or supplement the insurer's constant rate assumption in illustrations to one that reflects fluctuations, and agents are not permitted to create their own illustrations to use with the public.

But we can test insurer generated IUL and VUL illustrations for volatility to determine the probability of the policy sustaining to maturity under dynamic, real-world conditions. "Zero is the Hero" was the often-touted benefit of IUL, but any premium paid into a segment in which only the guaranteed minimum 0% crediting rate is applied is not going to meet the constant growth suggested by the illustration. Whether as a consequence of caps that are lower today than when originally illustrated – or skipping a premium – or a few 0% floor years, it is more likely than not that the policy's annual report is going to negatively deviate from the illustration.

Life Insurance Sustainability Analytics (LISA)

To our knowledge, LISA is the only toolset commercially available to test illustrations with stochastic analytical methods using implied volatility. Members of the Society of Financial Service Professionals may remember the Historical Volatility Calculator (HVC) – a member benefit – which was an early attempt at taking a similar approach to stochastic modeling of policy illustrations. LISA is a powerful, easy to use online toolset that tests IUL and VUL policy illustrations. Both new sales and inforce illustrations are supported. Testing is performed on the illustration's expectations of premiums, policy loans, crediting growth strategies, account values, and death benefits. In the quick and easy to use "LISA Benchmark" mode, policy charges are taken from industry average benchmarks appropriate to the style of the UL policy being tested. In "LISA Customized" mode, all elements of an illustration are tested, including actual charges. After inputs are complete, LISA reveals the probability of success of achieving the illustration's expectations, and the likelihood of sustaining for the insured's lifetime.

LISA Benchmark mode is easy to use and presents graphs and key metrics on screen and in reports in as little as five minutes. With just a few data points from a policy illustration, LISA generates an initial assessment of the probability of success. LISA then provides a robust 'what if' interactive tool to test modifications to the illustration's planned expectations. The 'what if' scenarios tool can also be used to anticipate changes to the non-guaranteed elements that could impact the future performance of the policy.

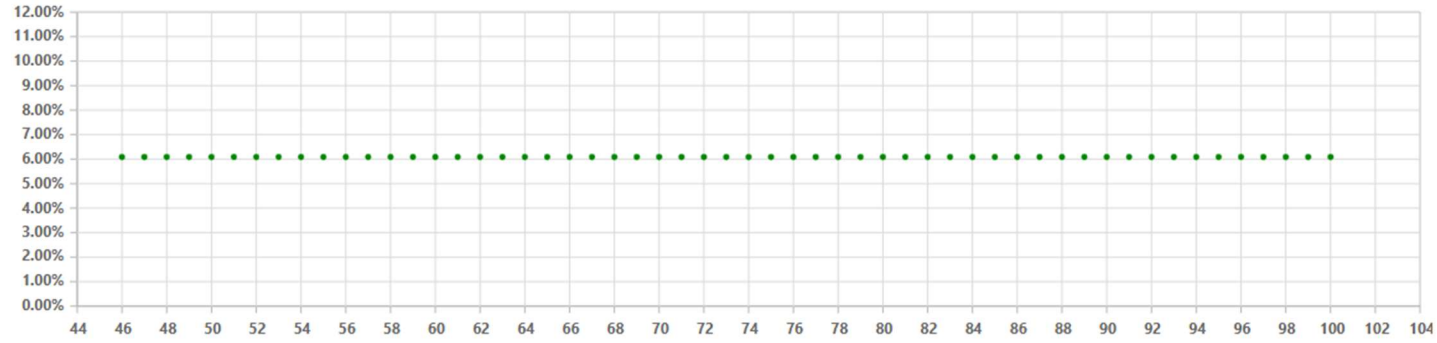
Example of Testing with LISA Benchmark

The following graphs taken from LISA represent an **Index UL** sales illustration for a male age 45 (EOY age 46) with a preferred estimated underwriting rating and designed for the maximum tax-free income (policy loans) from age 66 through age 85. With planned annual premiums of $60,000 for 20 years (total of $1,200,000) and a $1,000,000 death benefit, the illustration solved for 20 annual policy loans of $159,000 from age 66 through age 85 for a total of $3,180,000 of tax-free "income." The index strategy selected is based on the S&P 500® with a capped rate of 10%, a floored rate of 0%, and a participation rate of 100%.

First Test Demonstrates the Illustration "As Is"

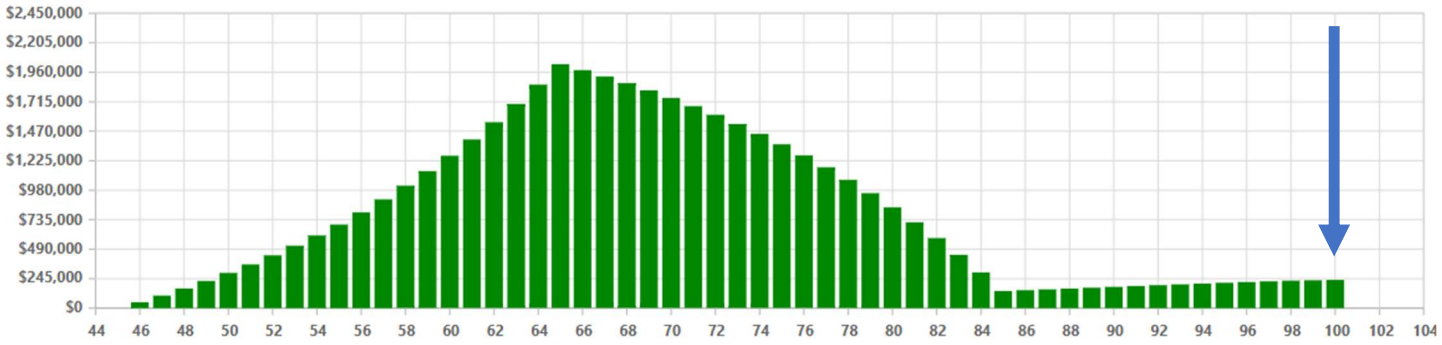
The first test runs with the illustration's maximum AG 49-A constant rate of 6.09% and reflects an impossible future where the annual crediting rate is always 6.09% and results in the following illustrated policy account values.

Annual Crediting Rates



Policy Account Values

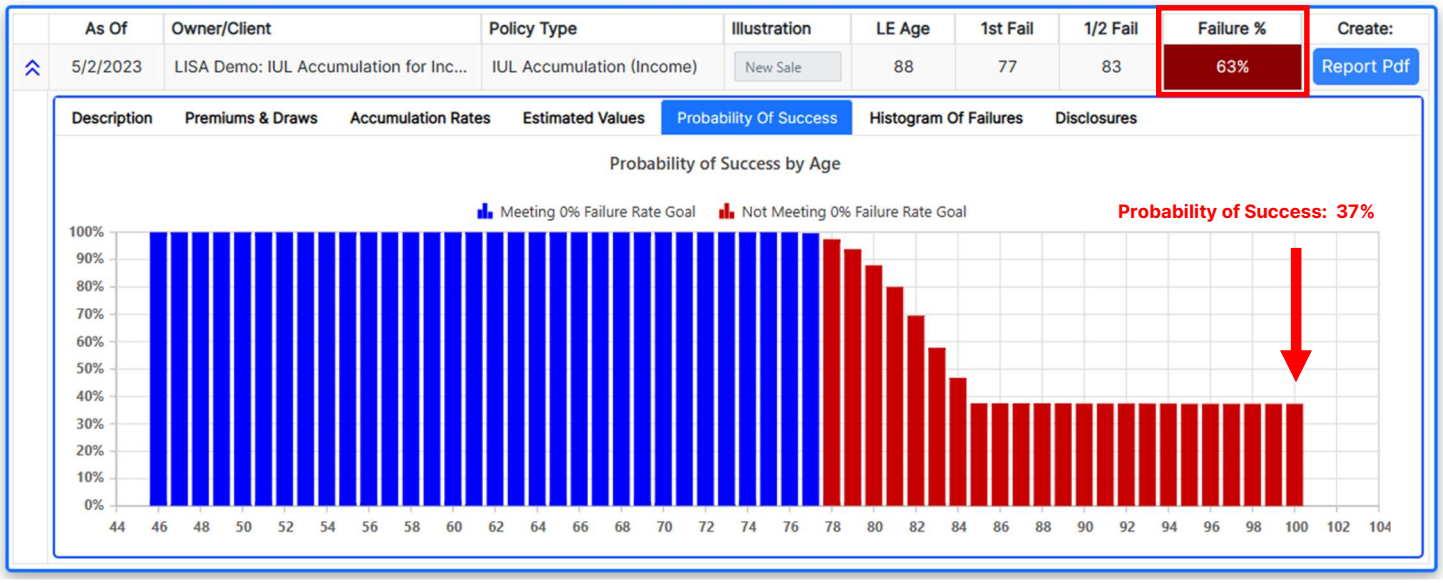
Policy Appears to Succeed to Age 100



The Next Test Applies Volatility to Assess the Probability Of Success

Running 1000 possible futures of fluctuating randomized sequence of annual crediting rates with an implied average return and standard deviation (volatility) of the S&P 500® constrained by the cap and floor. Result: a roughly 37% probability of success of the policy sustaining to age 100.

Here is the Probability of Success graph:

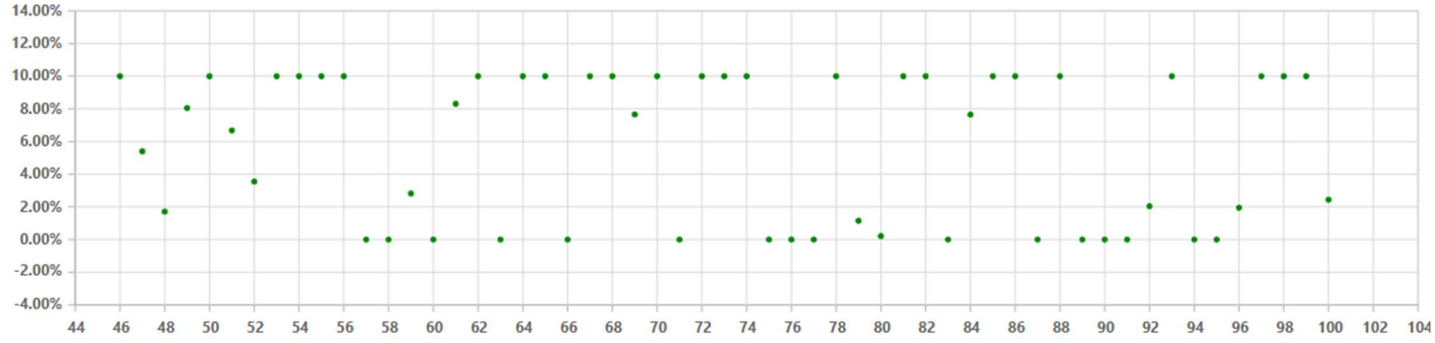


What Does a Single Trial Look Like?

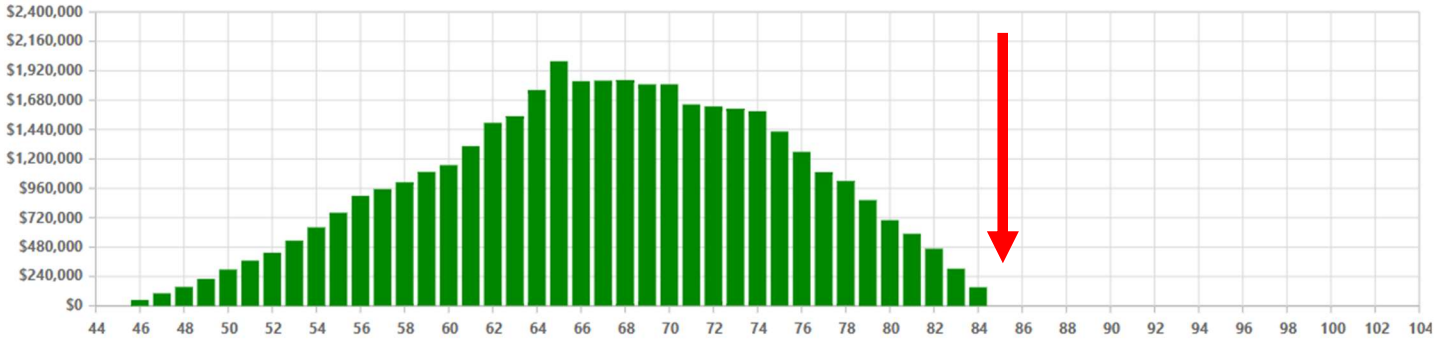
LISA's Scenarios analytics screen allows us to see what happens one trial at a time. This gives an appreciation of what volatility looks like. Here's what happens when we do this just four times.

A single random possible future: Trial One:

Annual Crediting Rates (S&P 500® with Cap of 10%, Floor of 0% and 100% Participation)

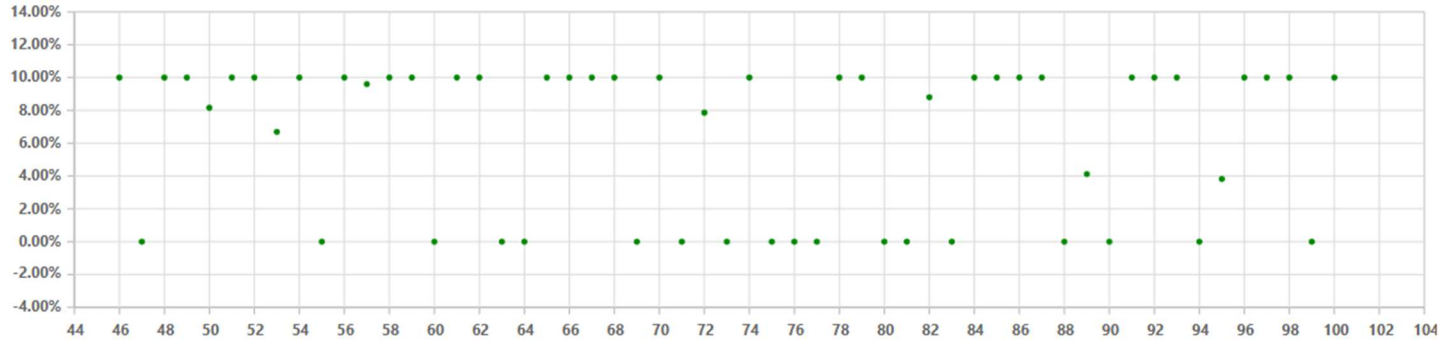


Policy Account Values — **Test Fails: Policy Lapses at Age 85**

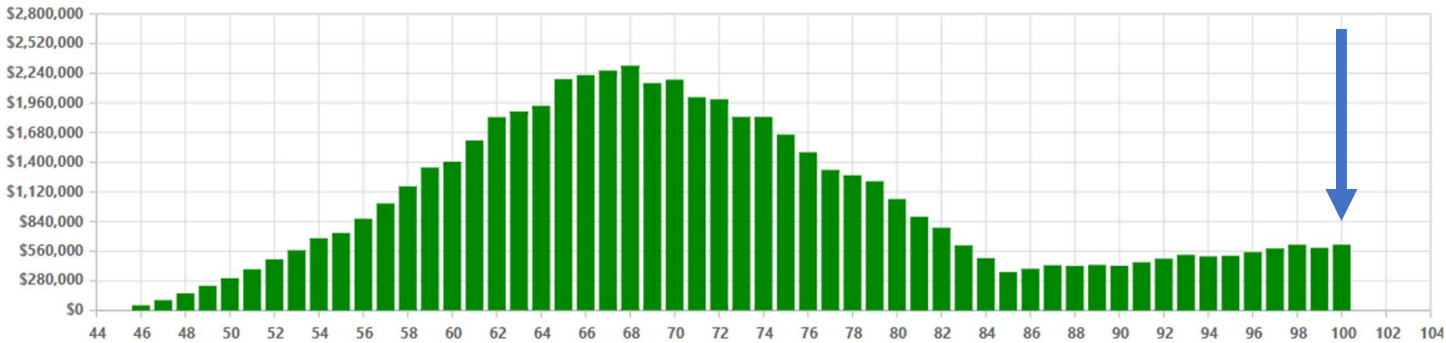


A single random possible future: Trial Two:

Annual Crediting Rates (S&P 500® with Cap of 10%, Floor of 0% and 100% Participation)

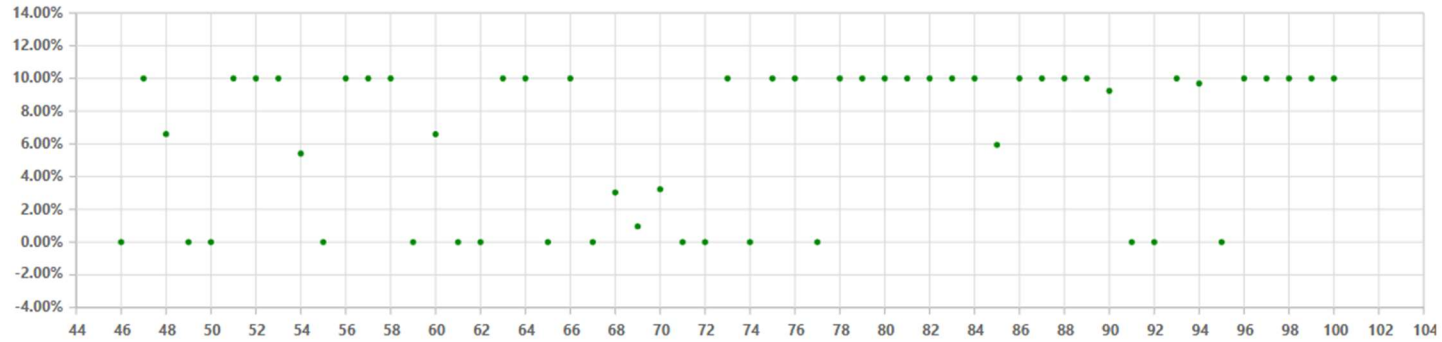


Policy Account Values — **Test Passes: Policy Sustains to Age 100**

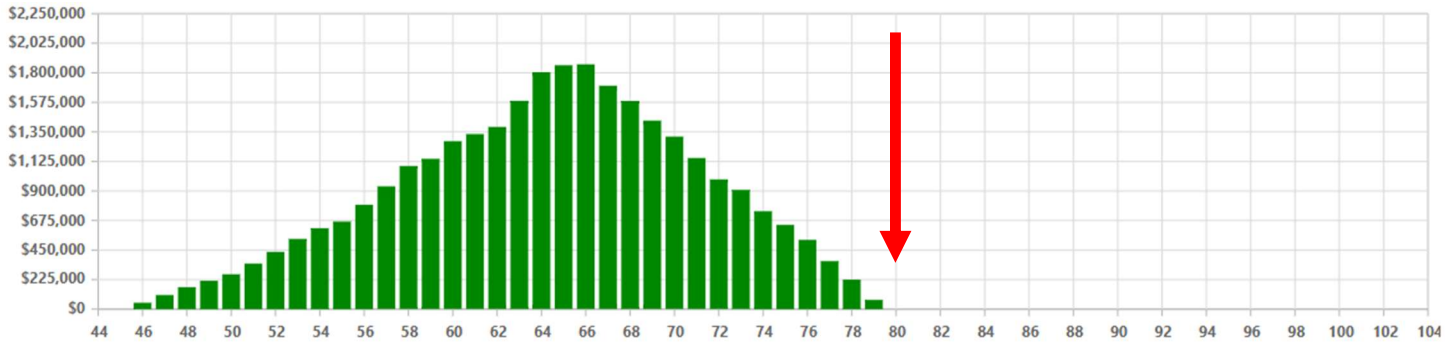


A single random possible future: Trial Three:

Annual Crediting Rates (S&P 500® with Cap of 10%, Floor of 0% and 100% Participation)

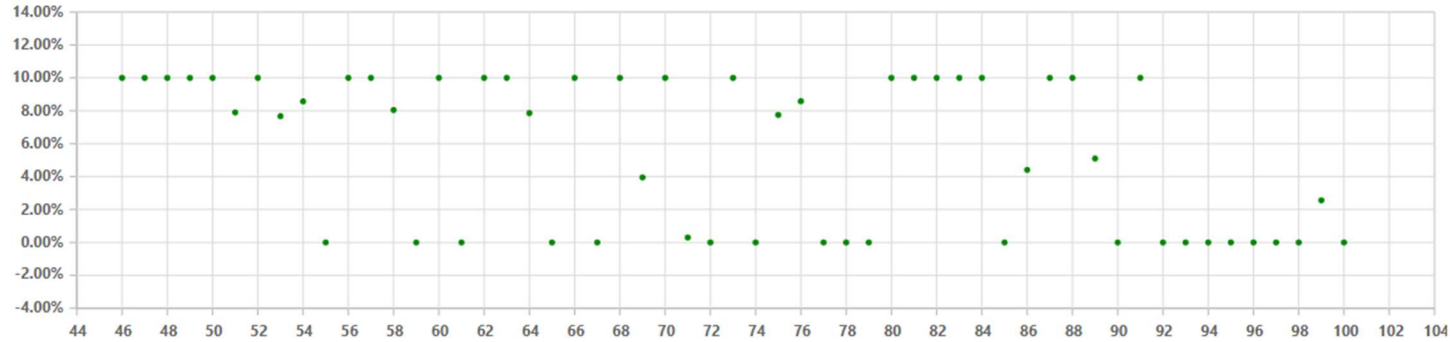


Policy Account Values **Test Fails: Policy Lapses at Age 80**

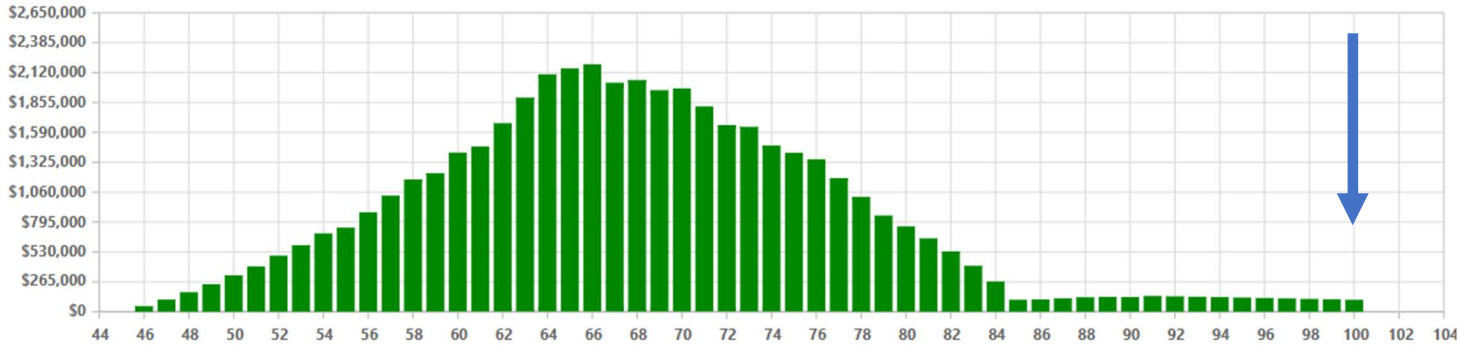


A single random possible future: Trial Four:

Annual Crediting Rates (S&P 500® with Cap of 10%, Floor of 0% and 100% Participation)



Policy Account Values **Test Passes: Policy Sustains to Age 100**



The result of all 1000 trials: 37% probability of success. **Would your clients find it acceptable that the initial design proposal has a tested result of a "coin toss" probability of success? Knowing this ahead of the sale is an obvious benefit of using a tool like LISA.**

What modifications can be made and tested to improve the client's Probability of Success?

What if we used LISA to make some adjustments and improve our design? Aiming for 100% probability of success of the policy sustaining to age 100, we could:

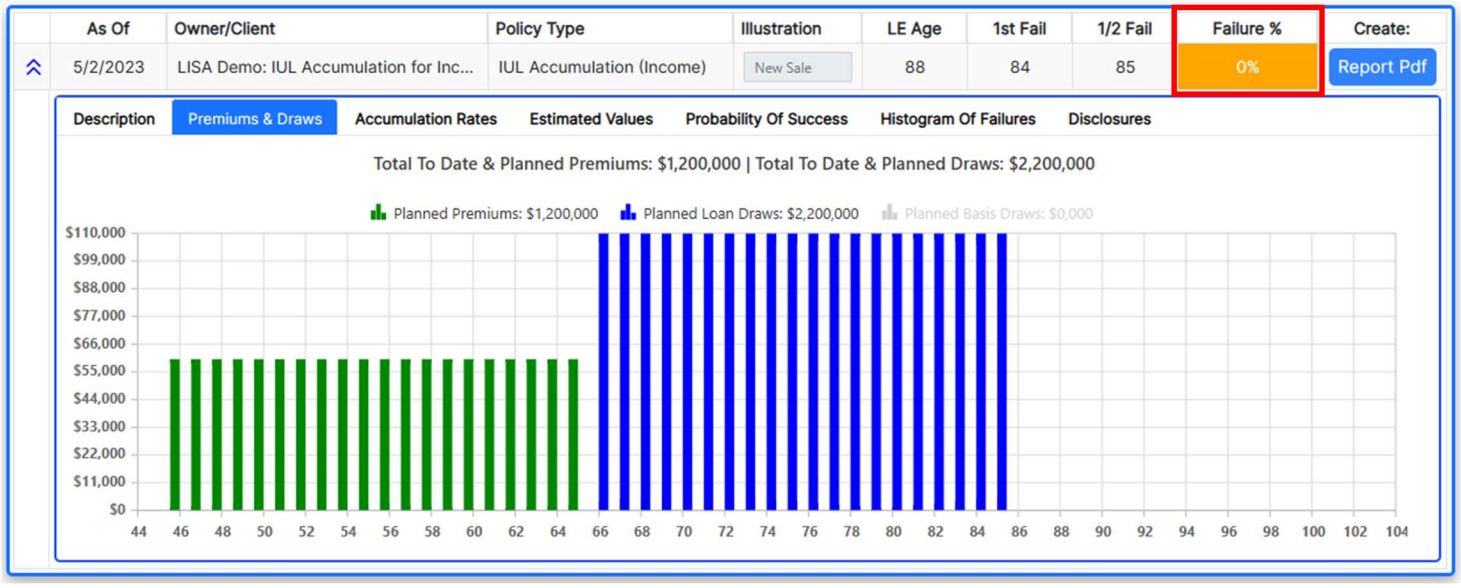
1) Test increased premium amounts for a higher probability of success,
2) Adjust the amount of the future policy loans (anticipated income),
3) Adjust the premium duration or loan duration, or
4) Test an alternative crediting strategy offered by the policy.

We recognize that those future policy loans for tax-free income are likely the most important client expectation that needs to be tested. We will focus on this for our scenario testing.

Solving for policy loans with the illustration's original assumptions

Let's start by lowering expectations for the annual policy loan amount from the original $159,000 per year. To achieve a 100% probability of success, assuming no other non-guaranteed elements are changed, we find that we must reduce policy loans to $110,000 per year (31% less than illustrated). The total expected income from policy loans is reduced from $3,180,000 to $2,2000,000, but we've taken our probability of success from a coin flip to virtual certainty.

Here's the premium and policy loan draws for income graph:

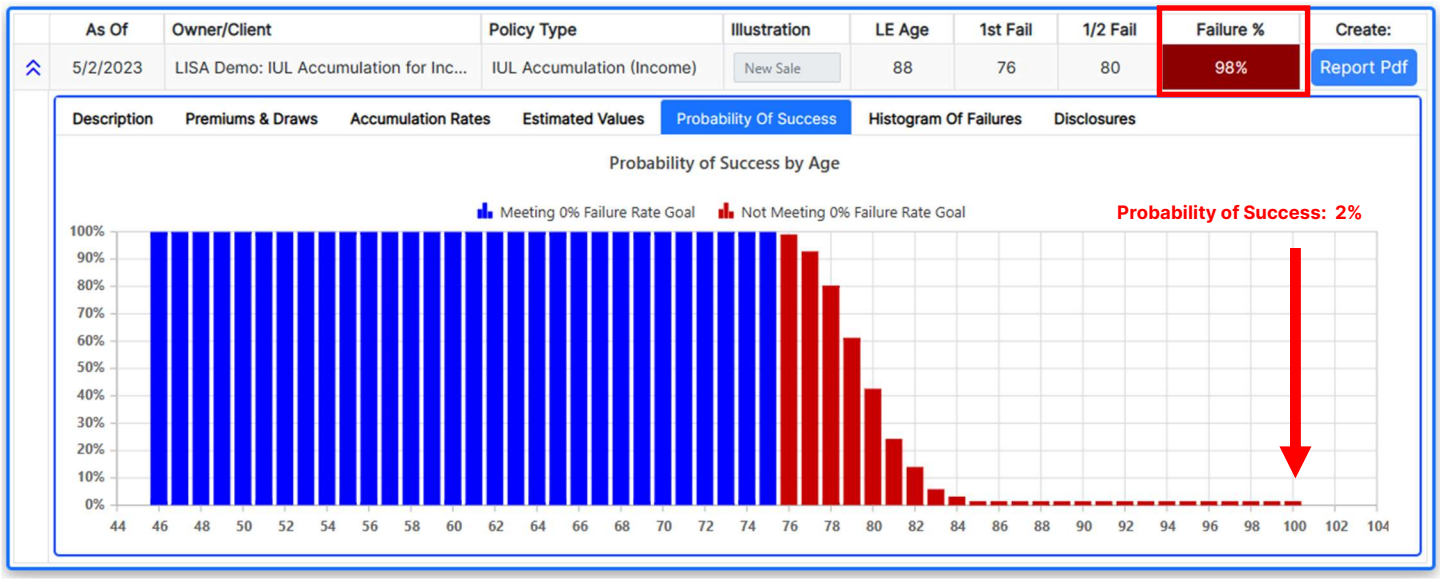


Solving for Policy Loan Draws with a Non-Guaranteed element change - Changing the Cap Rate in anticipation of possible insurance company action:

LISA gives us the ability to test index strategy assumptions as well. In this test, we're focusing on the index strategy's Cap Rate. The tested product has an index strategy Cap Rate of 10%. Considering the reduction in caps and participation rates over the past 10 years, how likely is it that these could be reduced in the future? Our view: **very**. How much can it change? **A lot**. One clue is to search the insurer's illustration for the Guaranteed Minimum Cap Rate. In this example, the Cap Rate can be reduced to as low as 1%!

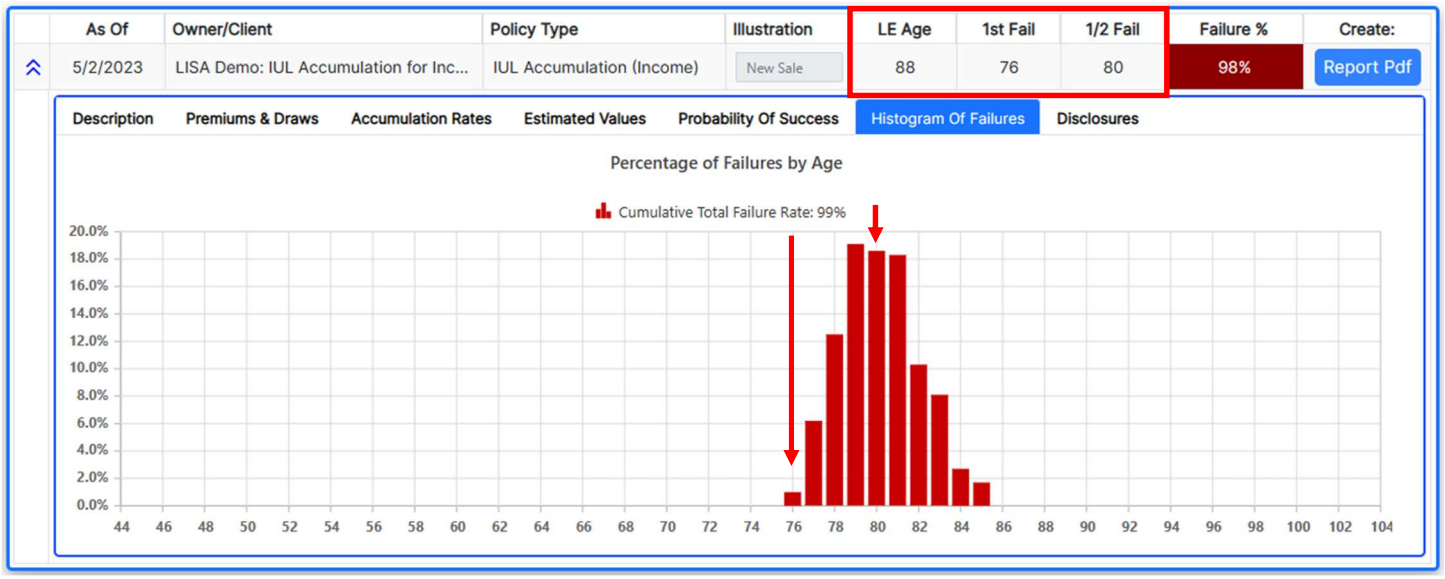
Assuming the illustration's original assumptions, but now reducing the Cap Rate to 8%, results in a 98% failure rate or a 2% Probability of Success in sustaining to age 100.

Here is the Probability of Success graph:



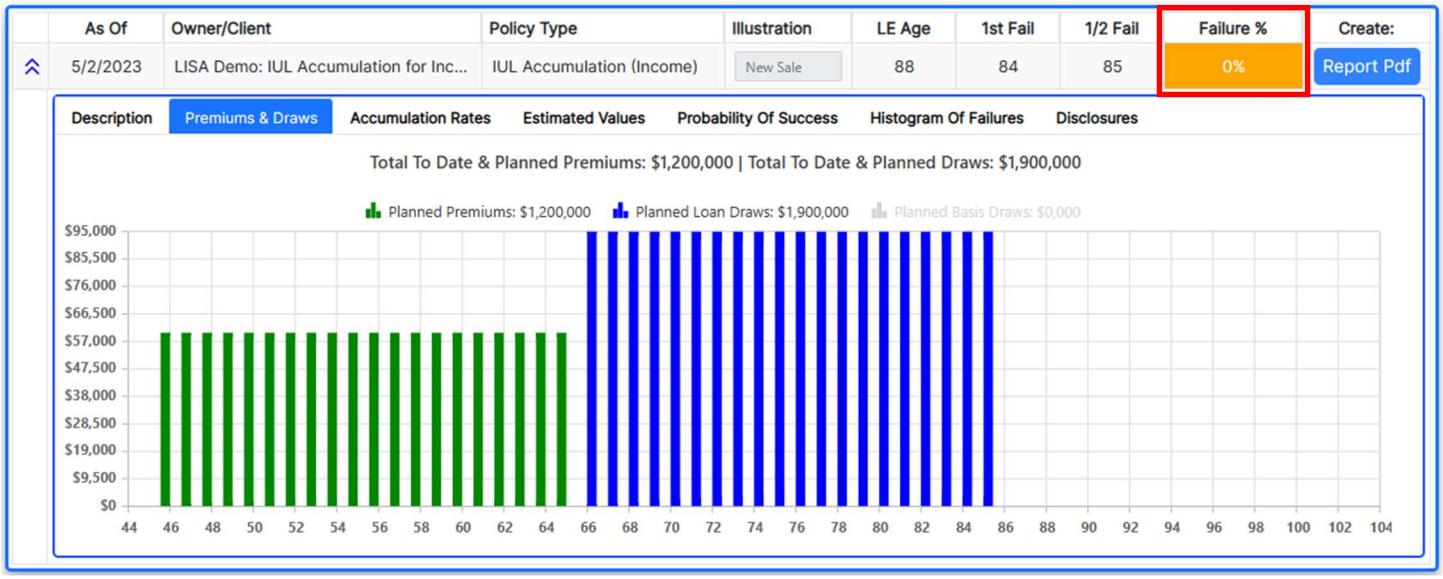
On another LISA Report tab, we see that the average life expectancy for the insured is age 88. Half of all the probable failures occur by age 80 and the first failure occurs at age 76.

Here is the Histogram of Failures graph:



To address this obvious risk to the future performance of the policy, we again modify the policy loan (income) amount to achieve a 100% probability of success. In this case, a few tests revealed that the annual loan had to be reduced from $159,000 per year to $95,000 per year (a 40% reduction). Total expected income from policy loans reduced from $3,180,000 to $1,900,000.

Here's the premium and policy loan draws for income graph:



Conclusions

This narrative is not suggesting there is anything wrong with IUL or VUL (or any other style of policy. There's something for everyone!). But products with underlying volatility and no specified premium guaranteed to maintain the policy for as long as the insured lives are challenging to explain – and to form realistic expectations.

In the early days of UL, the "flexible premium" was a calculation derived from assumptions about the cash value crediting rate and the death benefit. It often led the buyer to seek the "best price," and the more favorable the non-guaranteed assumptions, the lower the calculated premium. Unless the client (with advice from their agent) managed the policy over time, considering the inevitable requirement for more "premium" in the light of lower crediting rates (and possibly higher-than-illustrated COI), the policy would likely lapse before the insured's death at or beyond life expectancy. The current trend toward building cash value for the purpose of later-year withdrawals and loans from the policy are even more critically dependent on the calculated premium – or the amount and duration of the calculated draws from cash values – or the initially assumed index or indices. As demonstrated herein, there are many dependencies based on the assumption of constant credits or scales of expenses.

Absent hard guarantees, everything about the future is uncertain. The best we can ever do is evaluate – consciously or unconsciously - a probability of events occurring or not. "The probability of getting hit by lightning is pretty low; I'm willing to risk it when I take my next jog." This is the way our brains deal with future uncertain events. When it comes to selling (and buying) life insurance, we know people don't like uncertainty, and it has become customary to give them a stream of numbers to validate a sense of reliability. But IUL and VUL, with their many non-guaranteed current assumptions, demands more information that simply can't come from the policy illustration. **And that is what LISA can provide.**

It's the only practical way to look at an uncertain and unpredictable future – shifting the "best price" paradigm to a new approach: "What's my minimum acceptable probability of success for this policy I'm about to purchase?" That probability can be used to calculate a "premium," or a future flow of cash value, or set the death benefit, or choose an index that, when all is considered for the inherent volatility, will meet the client's probability of success requirements.

It is important to point out that LISA is not an alternative to the illustration, nor is it a supplemental illustration. With data derived from the policy illustration, LISA provides critical insight as to how a particular style of policy is likely to "perform" by subjecting illustration factors to 1000 alternative scenarios and produces a probability of success of any given set of parameters. *LISA produces an accurate statistical result – not an accurate prediction of a specific outcome.*

Setting up a LISA Benchmark analysis is very easy and the ability to run 'what-ifs' scenarios is illuminating regarding the imbedded risks inherent in the policy. The graphics and interactive tools quickly give easy-to-digest perspectives and visual insights. The report function is helpful for record keeping and is useful in sales meetings and policy reviews. The LISA Dashboard, private and secure, keeps all prior analysis readily available for further Scenarios and to remind us to do follow up Benchmarks as part of annual reviews with clients.

The constant rate current assumption illustration gives us false expectations about the possible future performance of the policy. Testing with LISA is the currently the only way to manage this illustration dilemma and is, in our opinion, an invaluable tool to enhance conversations with clients, improve policy outcomes, and achieve better client success.

Find out more about LISA and to try it out for yourself: https://LifeInsuranceAnalytics.com