October 28, 2014

Mr. Mike Boerner
Chairman – NAIC Life Actuarial Task Force

Re    Actuarial Guideline on Illustrations of Indexed Universal Life Policies

Dear Mr. Boerner;

The ACLI\(^1\) thanks the Life Actuarial Task Force (LATF) for the opportunity to provide comments on the two exposed Actuarial Guidelines for IUL Illustrations. In the comments that follow, we provide support for the ACLI’s proposal, questions about the alternative proposal, and highlight what we believe to be the strengths of ACLI’s proposal compared to the alternative proposal.

Illustrated rates vs. market conduct items

In our development of the proposed Actuarial Guideline, we focused on the value provided in an IUL and how it translates into an appropriate illustrated rate. We recognize that illustrated rates are not the only issue to be addressed; however, given the current lack of clear guidance, the ACLI chose to address illustrated rates first with an Actuarial Guideline. The advantage of an Actuarial Guideline is that it would:

- Apply to all carriers uniformly and immediately
- Clarify practices for actuarial functions
- Draw authority from existing regulations.

In February, the ACLI Life Insurance Committee charged the IUL Task Force to address, once the illustrated interest rate was settled, other important items such as loan illustrations, variability of returns, and other disclosures. Since these items potentially impact non-IUL life insurance products, and are not actuarial items, the ACLI believes it is appropriate to address them in an initiative separate from this Actuarial Guideline. While this work has currently taken a back-seat to the illustrated rate discussions, ACLI welcomes the opportunity to work with regulators on further improvements for broader illustration considerations. We do not believe that the existence of these

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\(^1\) The American Council of Life Insurers (ACLI) is a Washington, D.C.-based trade association with more than 300 legal reserve life insurer and fraternal benefit society member companies operating in the United States. ACLI advocates in federal, state and international forums. Its members represent more than 90 percent of the assets and premiums of the U.S. life insurance and annuity industry. In addition to life insurance, annuities and other workplace and individual retirement plans, ACLI members offer long-term care and disability income insurance, and reinsurance. Its public website can be accessed at www.acli.com.
other items should preclude resolution of guidance for illustrated rates as addressed in the exposed Actuarial Guideline proposed by ACLI.

The ACLI's proposal improves customer understanding

IUL illustrations are subject to the life illustration regulation (NAIC Model 582) and Illustration Actuaries are subject to the Actuarial Standard of Practice on such illustrations (ASOP 24). While use of current interest parameters and current charges is clearly allowed in illustrations, existing guidance for the IUL illustrated rate is unclear, since the credited rate relies on the performance of an external index. As a result, various crediting rates are illustrated today.

The limited guidance for the Illustration Actuary and the lack of consumer understanding that results from inconsistent methods of determining illustrated rates was a focus of ACLI activity. The ACLI identified the following goals, and then drafted a proposed Actuarial Guideline that meets those goals:

1. Create consistency in determining illustrated rates for similar IUL products;
2. Ensure customer awareness of the likelihood for variability of returns;
3. Align with existing regulations and other general account products;
4. Allow for uniform and expedient applicability; and
5. Be adaptable for future new product development and future economic scenarios.

The ACLI's recommendation meets these goals, and highlights the interest crediting features that are unique to IUL. Key features, which were influenced by all participating ACLI members including those who ultimately did not support the end product, include the following:

- Policy values are illustrated at two nonguaranteed interest rates in addition to the guaranteed rate in order to highlight the likelihood of variability of returns.
- A table of historical index rates is provided to highlight year-by-year variability of returns.
- A table of historical averages based on different index parameters is provided to highlight variability of nonguaranteed elements and the impact to credited rates.

The illustrations resulting from ACLI's proposal will provide valuable disclosure to consumers and will educate consumers on the different types of index crediting options that are available within an IUL policy.

The ACLI's proposal is technically sound and supported by actual experience

A key question that has been raised is whether a typical company’s investment strategy can support the rates that are determined by a look-back of past index performance. Often, the majority of a company’s assets supporting an IUL policy are typical general account assets (e.g. bonds and mortgages) and a smaller amount of assets are options that generate payoffs to support index-linked crediting rates.

A review of S&P 500 options\(^2\) since 1994 shows the cost of an annual 0%-12% call-spread has been relatively stable. Specifically, the mean cost was 5.09%, with a low cost of 3.74% and a high cost of 6.41%. At the time of the highest cost, a 10% cap would have brought the cost down close to the long-term average for the 12% cap. The average return over that period based on the cost of the

\(^2\) Prices for 12 month S & P options obtained from reports provided by Credit Suisse
options was more than 50%, implying that a 5% budget would have produced a 7.5% average return with annual rates that varied from 0% to 12%.

In this light, the ACLI’s proposed look-back methodology provides a result that is not unreasonable (7.6% for a one year S&P 500 index, using a 12% cap and a 0% floor). This is particularly true when viewed in the context of the various components of the proposal.

**Strengths of the ACLI Proposal**

The ACLI has reviewed the alternate proposal and all publicly available material in support of that proposal and wants to highlight the following strengths of the ACLI proposal:

An Illustration based on the ACLI proposal will:

- Educate consumers on IUL likelihood of variability of returns,
- Highlight the nonguaranteed nature of interest credits, that an illustration is not a projection,
- Show consistent illustrated rates for products with similar interest crediting options,
- Use illustrated rates that reflect the unique characteristics of the underlying index and crediting method,
- Align with NAIC Model 582 and ASOP 24:
  - Use non-guaranteed elements and actual experience in accordance with ASOP 24,
  - Be based on sound, accepted investment theory and actual experience,
- Be based on a disciplined current scale that results from clear, formulaic guidance for the Illustration Actuary, and
- Highlight risk tradeoffs in interest crediting options.

**Conclusion**

The ACLI continues to support our proposed Actuarial Guideline for IUL illustrated rates and looks forward to separate collaborations to address broader illustration considerations that impact all life insurance product illustrations. The ACLI welcomes the opportunity to work with LATF to discuss the proposed Actuarial Guideline and incorporate suggestions that will improve consumer understanding, protection, and disclosure within an IUL illustration that builds upon the foundation established within Model 582 and ASOP 24. Attached is a paper developed by a group of IUL carriers that provides additional detail and context to the various details of the proposals.

Cc Reggie Mazyck, NAIC
IUL Study: Theory, Practice, and Experience

Introduction
On August 14, 2014, the American Council of Life Insurers (ACLI) presented a proposed Actuarial Guideline for Indexed Universal Life (IUL) illustrations to the Life Actuarial Task Force (LATF). In this document we provide sound analytical support for this proposal. In response to the alternative proposal, actuaries from the ACLI majority coalition have put together the following detailed analysis, demonstrations, and case studies in support of IUL and the ACLI’s proposed guideline.

On September 5, 2014, a group of life insurance carriers distributed an alternative proposal for an IUL Actuarial Guideline and a letter describing the rationale behind the proposal. While we disagree with both the alternative proposal and the rationale, we share many of the goals and believe the ACLI’s most recent proposal contains robust solutions needed to address these issues.

In the analysis that follows, we will demonstrate:

- IUL products provide strong value for consumers looking for more growth potential without risk of loss of principal by enabling them to exchange their fixed account return for an index-based return.
- The ACLI’s proposal
  - Is consistent with existing regulation.
  - Is supported by actuarial principles, sound, accepted investment theory, and solid historical evidence.
  - Will enable consumers to understand the risks and rewards of the product.
- ACLI believes that the alternative proposal
  - Is inconsistent with existing regulation.
  - Is inconsistent with observed experience.
  - Does not provide sought-after consistency.

In Appendices A through E, we provide:

- A case study showing actual risk premium credits exceeding 400 basis points.
- An industry history of steady rate setting despite tumultuous market conditions.
- Analysis showing the ACLI’s proposal is calibrated with other UL products on the market.
- A demonstration showing the alternative proposal would cause incongruous disparity between insurers.
- Analysis demonstrating that the last 20 years were not ideal for IUL.

The value of IUL
IULs are a type of universal life insurance product, with flexible premiums and long expected duration. Unlike Traditional Universal Life (TUL), where policy value earns a fixed interest rate declared by the company, IUL provides the opportunity to earn interest based on the performance of a market index. Unlike Variable Universal Life (VUL), where policy value is invested in “subaccounts” that may increase or decrease due to market index changes, IUL is a general account product that provides an interest rate floor (e.g., 0% or higher) that protects against market index losses, and applies index parameters (e.g. caps, participation rates) that may limit the indexed interest earned. Thus, the average level of IUL interest crediting can be thought of as being between TUL and VUL.

Consumers who purchase an IUL choose to trade the relatively stable fixed account return for a more risky and uncertain return based on an index. IULs provide consumers the ability to earn interest based on a market index, while providing downside protection against market losses.

Because market indexes bear more risk than traditional general account bond portfolios, IUL index options are expected to provide a long-term average return that is higher than the general account rate consistent with capital market theory and practice.

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3 Although IUL credits indexed interest, it is not a security; its value cannot decrease due to market index changes.
Risk premium: theory and practice

Many insurers use a derivatives-based strategy to back their IUL products. By using call options, these insurers can offer their policyholders a responsible balance between principal protection and market exposure.

Investment portfolios with similar expected volatility (risk) have similar expected returns, and portfolios with higher expected risk will have higher expected reward. This theory is called arbitrage pricing theory, is reflected in the capital assets pricing model (CAPM), and it has been supported by historical experience.

Analysis from 1996-2013 has demonstrated a typical IUL portfolio comprised of bonds and call options has close to 300 basis points of risk premium over a portfolio consisting solely of bonds. Depending on the asset assumptions used, a back-tested one-year S&P IUL index interest option would have credited between 9-10% compared with a typical 6-7% general account portfolio yield during the same time period.

One company's actual weighted average payoff on their option positions from September 2005 to August 2014 was 9.14%, compared with a weighted average option cost of 4.94%.

The investment mechanics supporting IUL

IUL companies could use a number of strategies to support index-linked interest. The following two strategies would generate returns to match the index-linked interest with floor guarantee:

1. Invest in equities and buy put options for downside protection
2. Invest in fixed income instruments and buy call options for both upside potential and downside protection

Both strategies provide the same return profiles and therefore have similar, meaningful risk premium; strategy 2 is more capital efficient under RBC calculations.

Support for the ACLI’s proposed Actuarial Guideline

A life illustration is one of many tools used to facilitate consumer education. Ideally, the illustrated values in a life illustration would exactly match future policy performance; however, this cannot be accomplished for TUL, IUL, VUL, or whole life products due to nonguaranteed policy features such as interest rates, policy charges, dividends, and bonuses. Because of this, it is inappropriate to imply that any aspect of an illustration should be used to project or predict the future; illustrations are intended to show how different policy features work.

Although both Model 582 and ASOP 24 apply to IUL illustrations, IUL illustration actuaries have lacked clear guidance for illustrated rates, so the ACLI formed the ACLI IUL Task Force to develop guidance. The task force identified the following five goals, and then drafted a proposed Actuarial Guideline that meets those goals.

Goal 1. Create consistency in illustrated rates for similar IUL products

The ACLI’s proposal will result in identical maximum illustrated rates for IUL products with the same index, crediting method, and index parameters. Illustration actuaries will benefit from that clarity of the ACLI’s proposed guideline, and consumers will gain a better understanding of the product with this consistency.

Goal 2. Ensure consumer awareness of variability of returns

The ACLI’s proposed Actuarial Guideline includes three mechanisms to address this goal.

The first is the inclusion of a midpoint scenario in addition to the input scenario and guaranteed values. This additional scenario is unique to IUL, and will show the impact of lower interest rates to the various features of an IUL policy. It will also provide a safeguard

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4 Brealy and Myers, “Principles of Corporate Finance”
5 See Appendix A for the full case study.
6 30% Risk Based Capital (RBC) treatment for equities vs. 0.3% to 1% RBC treatment for derivatives
7 Model 582: “Life Insurance Illustrations Model Regulation” published by the National Association of Insurance Commissioners (NAIC)
8 ASOP 24: “Actuarial Standard of Practice No. 24: Compliance with the NAIC Life Insurance Illustrations Model Regulation” published by the Actuarial Standards Board
when indexed loans are being illustrated—illustrated rates will typically be less than loan charges so the loan mechanics will become more transparent.

The second is the historical look back table. This table will illustrate the potential variability of returns from year to year so consumers know not to expect a level interest rate in all years.

The third is a table showing the sensitivity of the look back rate to index parameter changes, which will emphasize that index parameters are nonguaranteed.

Goal 3. Align with existing regulations and other general account products.

An Actuarial Guideline should clarify and build upon existing regulations and standards of practice. Section 3.4.1(a) of ASOP 24 prescribes the use of experience factors when determining the investment income for the disciplined current scale:

- **Investment income**, which is defined as an “experience factor,” should reflect the “recent actual investment experience, net of default costs, of the assets supporting the policy block.”
- **Investment income** should also “reflect the insurer’s actual practice for nonguaranteed elements with respect to realized and unrealized capital gains and losses, investment hedges, policy loans, and other investment items.”

The same section of ASOP 24 also requires the use of historical index data specifically for IUL:

- **Investment return factors**, which are used to determine investment income, should “be reasonably based on recent actual investment experience […] the actuary should consider an appropriate time frame commensurate with such cycles and the characteristics of the underlying index in determining recent actual experience.”

The ACLI’s proposed 25-year look back aligns with ASOP 24 because it uses actual historical index experience and current nonguaranteed elements (i.e. the index parameters).

The use of current index parameters reflects the roughly 10 years of IUL carriers’ experience developing and selling IUL. Over that time period, most carriers’ index parameters have been reasonably stable.\(^9\) Proposals to use “historical” index parameters could result in index parameters that exceed an insurer’s current scale, would conflict with ASOP 24, and would be akin to showing historical fixed rates in a TUL illustration.

The ACLI’s proposed Actuarial Guideline builds on ASOP 24 by specifying an “appropriate time frame” to be used as the basis for the assumed investment returns. Since 1945, the average business cycle has been just over 5 years long\(^10\). As a result, a 25-year look back period would include 4-5 business cycles. Thus, the 25-year period proposed by the ACLI aligns with the guidance in ASOP 24.

Goal 4. Uniform and expedient applicability

Given the current lack of clear guidance, the ACLI first chose to address illustrated rates with an Actuarial Guideline, because Actuarial Guidelines:

- Apply to all carriers uniformly and immediately.
- Clarify practices for actuarial functions (in this case, the role of an illustration actuary).
- Align with existing regulations and standards of practice.

The ACLI established a process in the early spring to address market conduct-related illustration items—such as policy loans, variability of returns, and other disclosures—in a separate initiative. These market conduct items potentially impact non-IUL life insurance products, and are not actuarial items, so it was appropriate to separate them from the IUL Actuarial Guideline. Due to discussions on the illustration interest rates, work on the other issues has been deferred.

\(^9\) Actual historical IUL caps are shown in Appendix B.
IUL Study: Theory, Practice, and Experience

Practical problems with the alternative proposal

The alternative proposal introduces the following problems:

Problem 1. The alternative proposal does not comply with ASOP 24

The alternative proposal does not use actual experience to determine investment income, does not use actual index experience, and does not reflect the current cap (the nonguaranteed element), in conflict with Section 3.3.4.a. of ASOP 24.

Problem 2. The alternative proposal would result in inconsistent illustrated rates

Under the alternative proposal, two companies with the same index parameters could have two different illustrated rates. The opposite could also be true: two companies with different index parameters could have the same illustrated rates. This inconsistency would cause confusion and hinder consumer understanding.11

Problem 3. The alternative proposal does not provide guidance for the defined “indexed derivative return” (the proxy for equity risk premium)

Each illustration actuary would need to develop an individual evaluation methodology, resulting in ambiguity for compliance and inconsistencies across the industry.

Problem 4. Explanation of “indexed derivative return” within illustration would hinder consumer understanding of the IUL product

Agents would be expected to explain the actuarial derivation of the “indexed derivative return,” which would be further complicated by the inconsistencies among insurers. This detail would confuse consumers and distract them from the relevant mechanics of their policy, rather than improve their understanding of how the policy operates.

In addition, this would cause inconsistencies with all other life insurance product types, which are not required to disclose investment return assumptions in their illustrations.

Problem 5. The alternative proposal applies an arbitrary 12% limit on the “indexed derivative return” without any evidence to support it. According, it would not permit reflection of differences between various index designs.

The 12% cap on the “indexed derivative return” does not allow for the illustration of a risk premium consistent with historical experience, nor does it differentiate between the risk profiles among the index options. For example, under the alternative proposal, an IUL with a 5% fixed interest rate would have a 5.60% maximum illustrated rate, meaning the maximum difference between a general account and any index options would be 0.60%, which is far less than the 300 basis points found in the IUL Risk Premium Analysis.12

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11 Appendix D demonstrates the disparity caused by the alternate proposal.
12 See attached IUL Risk Premium Analysis
Controversial items raised by the alternative proposal

Claim 1: BXM index proves that “options are generally profitable to the seller and are unprofitable to the buyer.”

This assertion does not recognize the difference in risk profile between the covered call reflected in the BXM and the call spread reflected in IUL interest crediting.

A covered call is a strategy in which an investor has a long position in equity (i.e., owns stock) and then sells a call option on that same equity. In doing so, the investor gives up the potential for returns above a certain threshold in exchange for the certainty of the option premium.

A call spread is a strategy in which an investor buys a call at one strike price and sells a call at a different strike price. In the case of IUL, the strike price for the purchased call is typically at the level of the floor (e.g., 0% or 2%) and the strike price for the sold call is typically at the level of the cap. In doing so, the IUL carrier payoff structure matches the interest owed to the policy owner.

The payoffs for a covered call and a call spread purchase are shown in Figure 2.

Figure 2: BXM strategy vs. call spread payoffs

The BXM strategy maintains downside risk if the market decreases because the value of the equity decreases and the call option has no value. If the market increases, the investor must pay the increase to the call buyer; this is offset by the increase in the value of the equity and the investor keeps the call premium from the original sale.

A call spread strategy has limited downside risk; if the market decreases the investor loses the options premium. If the market increases, the purchased call will pay out in all scenarios, but this payoff is offset by the sold call in the event that the market increases beyond a certain strike price (the cap).

The significant difference in structure between the BXM and an IUL means the BXM analysis is not relevant to the value of an IUL.

Claim 2: Stochastic analysis proves the 25-year look back produces unsupportable rates

The analysis described in the alternate proposal support letter uses an Economic Scenario Generator (ESG) that was developed for variable annuity reserving valuation. As such, the ESG is calibrated to be conservative and produce a large number of low or negative equity scenarios relative to actual experience and reasonable assumptions. Thus, it is inappropriate to use these ESG scenarios to analyze the reasonableness of the 25-year look back methodology.

Claim 3: The expected return on a call option over time should be 0%.

One of the citations used to justify this position is academic literature describing risk-neutral valuation. However, the alternative proposal does not consider that risk neutral valuation is “merely an artificial device for obtaining solutions to the Black-Scholes differential equation.”13 Options and derivatives are not risk neutral, and they carry more risk than general account bond portfolios and even equities.14

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Claim 4: A 50% annual return assumption is “exorbitant.”

To some, a 50% expected return seems outrageous, especially considering the historical average annual return for the S&P 500 total return index was around 10%. But the letter ignores the fact that a position in a call option is riskier than a position in equity. If an index change is negative (even if only slightly negative) a call option will pay out $0 and the purchaser will lose the entire purchase price. So it would stand to reason that a purchaser of a call would expect a high upside in return for a chance of total loss.

Historical data supports this concept. Analysis of option prices obtained from Credit Suisse demonstrates a 54% historical average annual return for a one-year S&P 500 IUL interest option with a 12% cap and 0% floor.\textsuperscript{15} If the cap drops to 10%, the average annual return is still 52%.

Question 1: If call options are so profitable, why don’t insurers use them to generate higher returns in their own general accounts?

The purpose of an insurer’s general account is to provide a relatively stable fixed income return; the variable expected return of call options does not fit within that profile. Insurers’ match their assets with their liabilities, and buying call options beyond what is required to support policyholder interest crediting would result in an unmatched portfolio.

Question 2: Why would anyone sell a call if the long run expectation is negative?

Derivatives are rarely used as a sole investment, so one should use caution when analyzing derivatives use separately from the rest of an investment strategy. In addition, every investor’s goals are unique; often one cannot pinpoint the motivation behind an isolated decision.

Four examples of parties who sell call options:

\begin{itemize}
  \item Owners of equity portfolios who earn fee income by giving up the upside in their holdings. The combined positions (known as covered calls strategies) give up expected upside return for a more reliable stream of fee income.
  \item Insurers who subsidize the cost of an at-the-money-call purchase by selling an out-of-the-money call (i.e. call spread).
  \item Index managers and fund managers who protect equity investments against market declines at a reduced cost.\textsuperscript{16,17}
\end{itemize}

There are many observed examples of rational purchases made when the long run expectation is negative. Insurance in general is a prime example—anyone who buys insurance has a negative long run expectation, yet the benefits to the purchaser justify the cost.

One specific example of buying insurance is common within the variable insurance market. Although the long run expectation of buying a put is negative, variable insurance providers buy puts because they are willing to pay for protection. Another specific example: investment managers (whose fees are based on the value of customer accounts) will also pay for protection in exchange for the more certain income.

Claim 5: Investment professionals, endowments, and pension funds “sell options as a way to generate income.”

In reality, these professionals sell options as a part of the covered call structure described in the BXM analysis section of this paper; they are not sold alone as investments. Such parties who sell options to hedge their net long positions in equities remain net long. An IUL also has a net long position in equity.

\begin{itemize}
  \item Short term speculators who are not interested in long run expectation.
\end{itemize}

\textsuperscript{15} Annual options purchased once per month (mid-month), covering index changes from 9/16/1994 through 7/18/2014

\textsuperscript{16} E.g., the CBOE S&P 500 95-110 Collar Index\textsuperscript{SM} (CLL\textsuperscript{SM}):
  \url{http://www.cboe.com/SPXMS/SP500/95-10CollarIndex.aspx}

\textsuperscript{17} E.g., the Russell Strategic Call Overwriting Fund:
  \url{http://www.russell.com/us/Investment_Products/Russell_Funds/Strategic_Call_Overwriting_overview.asp}
Claim 6: Index performance from 1994 through 2013 was “ideal” for an IUL look back.

An analysis of the S&P 500 price index since its inception shows that the most recent 20-year time period was not “ideal” when compared with other historical 20-year time periods in terms of average volatility, interest rates, and equity movements.18

Since there is no such thing as a “typical” index period, it is important to follow ASOP 24 and find “an appropriate time frame commensurate with such cycles and the characteristics of the underlying index.” The ACLI’s proposed Actuarial Guideline defines this as a 25-year period. Historically, 25-year periods have been sufficiently long to include 4-5 business cycles, but are not so long as to understate the more recent results of an evolving marketplace.

Conclusion
In this paper, we have demonstrated:

- IUL products provide strong value for consumers looking for more growth potential without risk of loss of principal by enabling them to exchange their fixed account return for an index-based return.
- The ACLI’s proposal:
  - Is consistent with existing regulation.
  - Is supported by actuarial principles, established investment theory, and solid historical evidence.
  - Will enable consumers to understand the risks and rewards of the product.
- ACLI believes that the alternative proposal:
  - Is inconsistent with existing regulation.
  - Is inconsistent with observed experience.
  - Does not provide sought-after consistency.

Important analysis and additional information is contained in the appendices.

We welcome the opportunity to work with LATF to consider additional improvements that will further aid consumer understanding, while remaining consistent with existing guidance and established actuarial principles.

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18 Appendix E shows that 1994 through 2013 was unfavorable for IUL analysis.
Appendix A

Actual options experience demonstrates significant risk premium

Company XYZ case study

Company XYZ has invested in high quality bonds and equity index call spreads to back its IUL products since 2005, and has exhaustively tracked their historic investment activity. Company XYZ’s actual results for all of their products are far better than the levels the alternative proposal views as possible:

- The one-year S&P 500 product (12% - 13% cap, 0% floor) has produced attractive credits for policy owners, averaging 8.63% since inception.
- Their fixed-income portfolio has supported the options budget every year.
- As a percentage of account value, their average options cost has been 4.94%.
- The weighted average payoff on their option positions has been 9.14%.
- This translates to an 85% return on their options through a very difficult market cycle.
- The average fixed rate during that time was 5.15% with a range from 4.50% to 5.35%.

Company ABC case study

Company ABC has invested in high quality bonds and equity index call spreads to back its IUL products since January 2006, and has tracked their historic investment activity. Company ABC’s actual results are far better than the levels the alternative proposal views as possible:

- As a percentage of account value, their average options cost for all of their one-year S&P 500 products has been 4.64%.
- The weighted average payoff on their option positions has been 8.29%.
- This translates to a 78% return on their options through a very difficult market cycle.
- The average fixed rate during that time was 5.10% with a range from 4.00% to 5.80%.
Appendix B

Actual historical IUL caps were steady despite an unsteady market

IUL products have been on the market since 2002. During that time, caps have been reasonably stable despite tumultuous market movements.

Please note: Both IUL and TUL have nonguaranteed rates, such as crediting rates, mortality charges, and expense charges, and various product designs may result in different rates or different updates to those rates. Thus, an appropriate evaluation of any product considers the entire product, and not one rate alone (e.g., index parameters).

STeady: Actual historical caps for one-year S&P 500 annual point to point index option with 0% floor

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Unsteady: Actual historical market data for the same period

Figure 4: Significant historical swings in implied volatility

Figure 5: Significant historical downward interest rate trend
Appendix C

The ACLI’s proposal is calibrated with other UL products on the market

There is a wide variety of IUL indexed interest options available in the marketplace today.

**Figure 6: Example IUL indexed interest options**

<table>
<thead>
<tr>
<th>Crediting type</th>
<th>Crediting periods</th>
<th>Index parameters</th>
<th>Floor guarantees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual point to point</td>
<td>1-5 years</td>
<td>Caps with participation rates, participation rates only, uncapped with spread, uncapped with participation rate</td>
<td>0% to 2%</td>
</tr>
<tr>
<td>Monthly sum</td>
<td>1 year</td>
<td>Monthly caps with participation rates</td>
<td>0%</td>
</tr>
<tr>
<td>Trigger</td>
<td>1 year</td>
<td>NA (trigger interest rate)</td>
<td>0%</td>
</tr>
<tr>
<td>Monthly average</td>
<td>1 year</td>
<td>Participation rates only</td>
<td>0% to 2%</td>
</tr>
</tbody>
</table>

The differences in these interest options are compounded when paired with a variety of underlying indexes with different characteristics (e.g. expected volatility, expected return, correlation, etc.).

Each interest option presents a unique risk profile. Some interest options tend to produce steady, more consistent interest crediting from year to year, while other interest options tend to be more volatile with higher average credits at lower frequencies.

**Consistency across UL products**

The maximum illustrated rate should be set at a level that is consistent with other products and allows IUL illustrations to illustrate these differences. The 12% maximum illustrated rate was selected for VUL because it was unlikely that an average would exceed 12%. The maximum for IUL illustrations should be set with a similar goal.

The most risky interest option available for an IUL today is the uncapped 5-year option with a 100% participation rate; based on arbitrage pricing theory, it is also the option with the highest expected return. Since this option is uncapped, it should have a similar expected return as the underlying index, with some risk premium lost as a result of the 0% floor guarantee.

This uncapped 5-year interest option is currently available based on the S&P 500 price index. Many VULs available today offer the S&P 500 total return fund. The two differences between the returns in these options are (1) dividends, and (2) the 0% floor. The difference between the maximum VUL illustrated rate and the maximum IUL illustrated rate reflects these differences.

**Setting a maximum illustrated rate**

The 10% maximum illustrated rate is set at a level where it is unlikely that an IUL average would exceed it, and allows appropriate room for the look back mechanism to allow different indexes with different index parameters to be compared and contrasted in terms of historical performance.

While the 10% maximum is one guardrail, the look back uses a 25-year average that further limits the maximum illustrated rate. The 10% guardrail will be redundant for most interest options—the look back rate for the most common products will be approximately 7.5%.
Appendix D

The alternative proposal would cause disparity between insurers

Figure 7: Comparison of two proposals

<table>
<thead>
<tr>
<th></th>
<th>General account yield</th>
<th>Option budget</th>
<th>Index cap</th>
<th>Index floor</th>
<th>ACLI’s proposal (25-year look back)</th>
<th>Alternative proposal (112% of GA yield)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company 1</td>
<td>5%</td>
<td>5%</td>
<td>12%</td>
<td>0%</td>
<td>7.6%</td>
<td>5.6%</td>
</tr>
<tr>
<td>Company 2</td>
<td>4%</td>
<td>5%</td>
<td>12%</td>
<td>0%</td>
<td>7.6%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Company 3</td>
<td>5%</td>
<td>4%</td>
<td>8%</td>
<td>0%</td>
<td>5.6%</td>
<td>5.6%</td>
</tr>
<tr>
<td>Company 4</td>
<td>5%</td>
<td>3%</td>
<td>6%</td>
<td>0%</td>
<td>4.4%</td>
<td>5.6%</td>
</tr>
</tbody>
</table>

Observations:

1) Although Company 1 and Company 2 can use the same illustrated rate under the ACLI’s proposal, to comply with disciplined current scale (DCS) the underlying policy charges would need to be higher for Company 2 so their illustration would perform worse. Under the alternative proposal the impact of the higher charges would be compounded by being forced to use a lower maximum illustrated rate than other companies, despite identical index returns.

2) Under the alternative proposal, Company 3 and Company 4 could theoretically pass DCS testing with lower insurance charges than Company 1, which would provide them higher illustrated values despite their lower caps. The customer would not understand the impact of caps on returns over a long time horizon.
Appendix E
1994-2013 was not “ideal” for IUL

Claim/Null Hypothesis: The most recent 20-year period (1994-2013) was “ideal” for IUL.

Process: Evaluate the most recent period against all other 20-year periods on the following measures:

- Equity returns
- Volatility
- Interest rates

If the most recent period was ideal for IUL, equity returns will be relatively high, volatility will be relatively low, and interest rates will be relatively high. Analysis uses data from 1953 through 2013. ¹⁹

Conclusion: Reject the Null Hypothesis. The most recent 20 calendar year period was not ideal for IUL. Equity returns were near average, volatility was medium to high, and interest rates were at all time lows.

EQUITY RETURNS

Equity returns during the most recent 20-year period were neither atypical nor ideal for IUL:

Figure 8: 20-year period S&P 500 price index analysis
Geometric average annual index change

<table>
<thead>
<tr>
<th>Percentile</th>
<th>0</th>
<th>0.25</th>
<th>0.5</th>
<th>0.75</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>All periods</td>
<td>2.73%</td>
<td>4.33%</td>
<td>6.75%</td>
<td>9.60%</td>
<td>13.95%</td>
</tr>
<tr>
<td>Most recent</td>
<td>7.13%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Calendar year data was used for equity return analysis (1/1 to 12/31).

VOLATILITY

Volatility during the most recent 20-year period was atypical, but not ideal for IUL:

Figure 9: Historical realized volatility

Realized volatility was generally the same or higher during the last 20-year period with a huge spike in 2009. Thus, volatility was atypical, but was not ideal for IUL during that period.

Note that actual option costs depend on implied volatility, not realized volatility, but there is not enough implied volatility data to determine a trend by looking at implied volatility alone. The following graph shows the relationship between realized volatility and implied volatility since the early 1990’s. The strong correlation between the two implies we can use historical trends in realized volatility to infer trends in implied volatility.

Figure 10: Historical realized volatility and implied volatility

¹⁹ 1-year CMT data first available in 1953.
INTEREST RATES

Interest rates during the most recent 20-year period were atypical, but not ideal for IUL:

**Figure 11: 20-year period one-year CMT rate analysis**
Arithmetic average annual interest rate

<table>
<thead>
<tr>
<th>Percentile</th>
<th>0</th>
<th>0.25</th>
<th>0.5</th>
<th>0.75</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>All periods</td>
<td>3.84%</td>
<td>4.94%</td>
<td>6.85%</td>
<td>7.93%</td>
<td>8.27%</td>
</tr>
<tr>
<td>Most recent</td>
<td>3.84%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 12: 20-year historical averages – one-year CMT rates**
Arithmetic average annual interest rate