

Life insurance due care requires an understanding of the factors that impact policy performance and drive product selection.

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D U E C A R E B U L L E T I N

February 2012

Assessing the Impact of Low Interest Rates on Life Insurance Products

Generally speaking, interest rates have been on the decline for more than 30 years. More recently, events of the financial crisis, which began in 2008, have contributed to this decline:

- 1. The Federal Reserve responded to the crisis by suppressing interest rates in order to spur economic growth; and
- 2. Investor demand for the relative safety of fixed income investments like U.S. Treasury and high-quality corporate bonds has increased, driving prices up and yields down.

Interest rates have a direct impact on life insurers and the products that they issue and manage. Companies generally make profits from the spread between what they earn on their general account portfolios and what they credit as interest on insurance policies. Policyowners are impacted as low interest rates result in lower investment returns credited to policies over time.

Historically low interest rates are likely to remain in the near term. On January 25, 2012, the Federal Reserve announced plans to keep short-term rates very low through 2014. This reinforces the importance of considering the impact of low interest rates on life insurers and their products.

This M Due Care Bulletin examines the impact of a low interest rate environment on insurers, the performance and management of in-force products, and pricing of new products.

As the analysis in the Bulletin will show, there will be continued downward pressure on general account portfolio yields, resulting in likely continued reductions in universal life (UL) crediting rates and whole life (WL) dividend interest rates. In addition, the lower portfolio yields may drive less favorable index universal life (IUL) index strategies (i.e., lower cap rates) and drive up prices for no-lapse guarantee (NLG) UL (which will also be plagued by impending changes to reserving requirements).

It is important to note that the low interest rate issue is not unique to life insurance. Low interest rates are a general economic condition that impact all fixed income financial instruments. In fact, due to the portfolio nature of crediting rates, the insurance industry is generally better positioned to provide higher yields than other fixed income financial instruments.

Given the continued interest rate pressures on life insurance products, the following are recommendations to consider:

- 1. **New Sales** Fund conservatively to anticipate lower future crediting rates. Use downside scenario testing (i.e., lower crediting rates) to test the funding level.
- 2. **In-force Business** Perform annual policy reviews with in-force illustrations that demonstrate the impact of reductions in crediting rates on policy performance. Again, provide downside testing to determine appropriate funding levels going forward.

- 3. **Product Types** Consider product types that may provide additional yield, such as IUL and VUL. Many of these products provide low cost medium duration NLG riders that provide downside protection. In addition, IUL typically provides an annual floor of zero to one percent.
- 4. **NLG UL** While NLG can be a good product option for older clients, prices will likely continue to increase. Consideration should be given to the lack of cash values and lack of upside performance potential with NLG. In many instances, a current assumption UL product can provide lower cost with significant downside performance cushion relative to NLG.

With regard to specific product selection for new business, consider the following observations:

UL – Expect crediting rate reductions of up to 50 basis points (bps) over the next three years and model new business cases with that expectation in mind.

NLG UL – Prices have risen on average more than five percent in the last three years. Low interest rates and evolving AG₃₈ reserving regulations will likely cause guaranteed premium prices to continue to increase.

Indexed UL – Low interest rates could result in lower caps on index crediting rates. However, if equity markets have a sustained period of good returns, IUL could provide better returns than fixed account UL crediting rates. Keep in mind that the floor on indexed crediting rates is usually below the guaranteed crediting rates offered on UL policies so policyowners should be comfortable with the higher volatility of IUL returns.

Variable UL – Following a decade-long period of stagnant market returns, equity markets could offer better return potential relative to the low current yields found in fixed income. If they can withstand the accompanying volatility in returns, policyowners searching for higher returns may find better potential in VUL than in fixed account UL.

With continued uncertainty, some may consider delaying buying decisions and waiting for more clarity regarding the interest rate environment. This has proven to be a less than ideal strategy relative to making decisions based on the current environment, one's tolerance for volatility, and product suitability. This path, together with conducting annual in-force policy reviews, monitoring market conditions and trends, and providing insight on new products and pricing, will drive the sustainability of a plan designed to meet a client's goals and objectives.

Life Insurer General Accounts

Life insurers invest net policy premiums into their general account to support the interest crediting obligations of traditional life insurance policies. WL and UL policies are similar in that both provide a current investment credit (which can be adjusted periodically but is subject to contractual minimums) based on the performance of the general account portfolio supporting the product. These products are typically priced with an assumed spread between the investment rate of return earned by the general account portfolio and the rate of return credited to policies. The target interest spreads vary by product but typically fall in the range of 50–150 bps. See Example 1.

If the portfolio investment return drops to 5.75 percent, the insurer drops the policy crediting rate to maintain its target interest spread. See Example 2.

Example 1: Determination of Crediting Rate		
Assumed Portfolio Investment Return	6.00%	
Target Interest Spread	1.00%	
Assumed Policy Crediting Rate	5.00%	

Example 2: Effect of 25 bps Reduction in Investment Return

Assumed Portfolio Investment Return	5.75%
Target Interest Spread	1.00%
Assumed Policy Crediting Rate	4.75%

Since the objective is to maintain relatively stable crediting rates, and because regulations dictate required capital levels based on the risk level of investments held by life insurers, companies typically invest the majority of their general account assets in fixed income securities such as bonds and mortgages (Chart 1).

On average, more than 80 percent of life insurance company general account assets are invested in bonds and mortgages. Typically 90 percent or more of those fixed income investments are invested in high-quality securities (Chart 2). Chart 1: Asset Allocation of General Accounts for the 25 Largest Life Insurance Companies in Terms of In-force Face Amount of Permanent Policies

	<u>Average</u>
Bonds	70.1%
Mortgages	11.2%
Preferred Stocks	0.3%
Common Stocks	4.1%
Real Estate	0.6%
Policy Loans & Premium Notes	5.9%
Cash & Short Term Investments	2.9%
All Other Invested Assets	4.9%
Total Cash & Invested Assets	100.0%

Chart 2: Investment Grade of Bonds Owned by the 25 Largest Life Insurance Companies in Terms of In-force Face Amount of Permanent Policies

Investment Grade	<u>Average</u>
NAIC Class 1	63.3%
NAIC Class 2	29.3%
Total Investment Grade	92.6%
Below Investment Grade	<u>Average</u>
NAIC Class 3	4.2%
NAIC Class 4	2.0%
NAIC Class 5	0.9%
NAIC Class 6	0.2%
Total Below Investment Grade	7.4%

In addition, since the liabilities of traditional life insurance are typically long-term in nature, life insurers invest in assets with similarly longer-term durations (Chart 3). Chart 3: Average Maturities of Bond Portfolios for the 25 Largest Life Insurance Companies in Terms of In-force Face Amount of Permanent Policies

1 year or less	10.9%
1 to 5 years	29.8%
5 to 10 years	29.5%
10 to 20 years	11.6%
More than 20 years	18.2%
Weighted Bond Maturity	9.4 years

Moody's Interest Rate Benchmarks for UL and WL

For years M Financial Group has utilized the Moody's Aaa Long-Term Corporate Bond Yield Average as a benchmark for UL crediting rates and WL dividend interest rates. The Moody's Benchmark is ideal as it represents a long-term, high-quality, fixed income investment. We have found that the five-year rolling average of the Moody's Bond Yield Average has the best correlation with UL crediting rates and the seven-year rolling average has the best correlation with WL dividend interest rates. The rolling average represents a portfolio of seasoned investments maturing and rolling over with the purchase of new investments (see Figure 1).

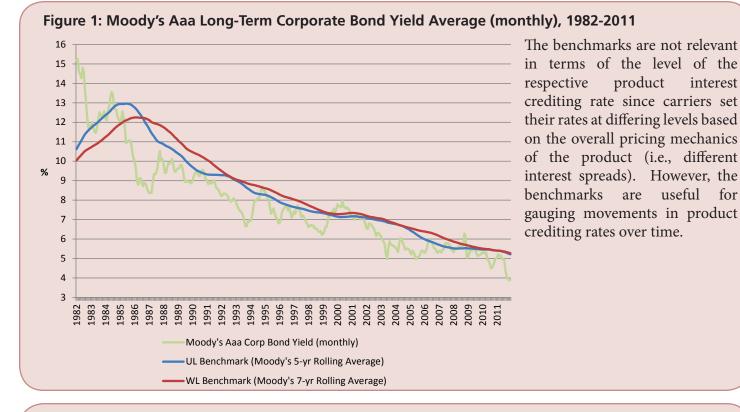


Figure 2: Carrier UL Crediting Rates and UL Benchmark (1997-2011)

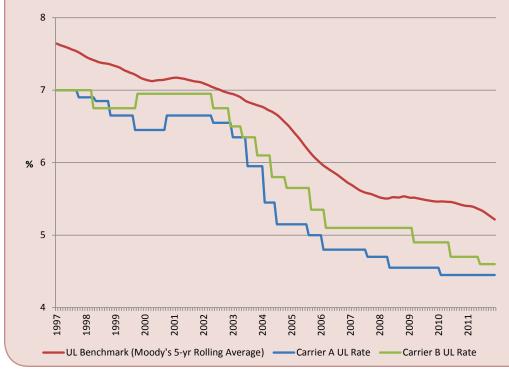
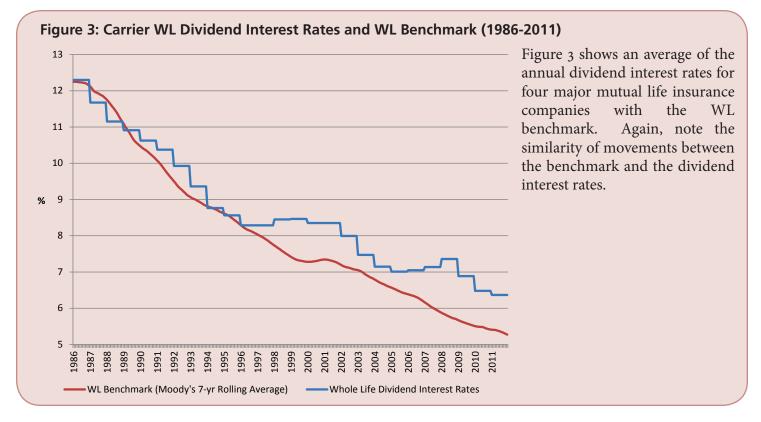


Figure 2 compares the UL crediting rate with the UL benchmark for two products since 1997. Note the similarity of movements between the benchmark and the crediting rates.



The correlation of these benchmarks to crediting and dividend interest rates makes it appropriate to use them to model possible future movements in crediting and dividend interest rates.

Impact of Low Interest Rates on Crediting and Dividend Interest Rates

As already seen in Figure 1, interest rates have been trending downward for more than three decades. As rates have fallen near historic lows, rating agencies Moody's Investors Service (Moody's) and Standard & Poor's (S&P) have recently expressed concern about the impact of protracted low interest rates on life insurers which offer products with minimum guarantees. While both agencies agree that life insurers are well-positioned to withstand low interest rates in the short term, they also concur that if interest rates remain low for several more years, life insurers will be strained by spread compression and the minimum rate guarantees common in fixed account insurance products. As an example, older products can have guaranteed rates of five percent or six percent and current portfolio yields of six percent or less, creating spread compression or even negative interest margins.

In their commentary, S&P issued the following forecasts for AAA new money bond yields under three scenarios: a baseline scenario, a pessimistic scenario, and an optimistic scenario. Because new money rates are 130 to 140

bps below the interest rate benchmarks, under all three scenarios S&P says that insurers will face pressure on their investment yields for some period of time (see Chart 4).

Using these forecasts we can estimate the movements of the benchmarks over time (

Chart 4: Standard & Poor's Economic Forecasts for AAA Bond Yields (%)			
	2012	2013	2014
Baseline Forecast	4.4	4.6	5.1
Pessimistic Forecast	4.1	4.5	5.1
Optimistic Forecast	5.4	5.7	5.5

the benchmarks over time (see Chart 5 on page 6).

Based on S&P's projections, by the end of 2014 the UL benchmark could experience a change that ranges from a 56 bps reduction under the pessimistic scenario to a two basis point increase under the optimistic scenario. The WL benchmark would drop by 38 bps in the pessimistic scenario and would rise by three basis points in the optimistic

scenario. This means that under S&P's optimistic bond yield scenario, our benchmarks would project essentially flat rates for UL and WL products.

	2011	2012	2013	2014	Change
Baseline Forecast	3.93*	4.40	4.60	5.10	1.17
UL Benchmark (EOY)	5.22	4.98	4.78	4.74	-0.48
WL Benchmark (EOY)	5.27	5.15	5.01	4.95	-0.32
	2011	2012	2013	2014	Change
Pessimistic Forecast	3.93*	4.10	4.50	5.10	1.17
UL Benchmark (EOY)	5.22	4.92	4.70	4.66	-0.56
WL Benchmark (EOY)	5.27	5.11	4.95	4.89	-0.38
	2011	2012	2013	2014	Change
Optimistic Forecast	3.93*	5.40	5.70	5.50	1.57
UL Benchmark (EOY)	5.22	5.18	5.20	5.24	0.02
WL Benchmark (EOY)	5.27	5.30	5.31	5.30	0.03

* Moody's Aaa Average for December 2011

However, even the pessimistic forecast is showing an increase in new money rates from the current Moody's Aaa Long-Term Bond Yield Average, which was 3.93 percent in December 2011. Should rates stay at the current level for a protracted period of time, the impact on UL and WL product rates would likely be more severe than what is projected by the benchmarks under the S&P pessimistic scenario. The bottom line is to expect continued downward pressure on crediting rates over the next three to five years.

Considerations for Product Selection and Management

Universal Life

UL products have increased in popularity with buyers who view the portfolio crediting rate (usually four to five percent) as an attractive alternative to other fixed interest rate investments. However, based on the UL benchmark, it seems likely that crediting rates will be positioned to continue their decline over the next few years.

Older in-force policies may have been issued with higher guaranteed crediting rates than current products. Some in-force policies may have a guaranteed crediting rate of 5 or 6 percent, while new policies may only have guaranteed rates of two or three percent. Those older in-force policies are likely already at the guaranteed minimum crediting rate. If so, the carrier may not be able to achieve their target interest spread.

Policyowners should consider proactive steps to mitigate the impact of further crediting rate reductions. Steps could include increasing premium payments to protect the policy against lower crediting rates or reducing the policy face amount if the policyowner is unable or unwilling to pay additional premiums. Annual reviews and in-force illustrations (including downside scenarios) will be essential to efforts to prevent an undesirable outcome.

New buyers should be prepared for future reductions from the current policy crediting rate. So far in 2012, UL crediting rates have generally fallen by 10–30 bps, which is consistent with the drop in the UL benchmark. Additionally, carriers are moving their product designs to lower guaranteed minimum crediting rates to maintain their flexibility to adjust to low interest rates. Illustrating and funding the policy with some conservatism (e.g., funding to endow the policy instead of a minimal amount of cash value at maturity) will help the policy to absorb reductions in the crediting rate.

Even if interest rates spike up quickly, new buyers are unlikely to see higher crediting rates in their policy. If that occurs, carriers may offer new products invested in higher yielding new money portfolios (as an alternative to lower rate seasoned portfolio products). Current buyers of UL products may not view the investment returns of today's products to be attractive in the future relative to current levels. In such a scenario, buyers could be encouraged to

consider 1035 exchanges to the new money portfolio products. A 1035 exchange will only be feasible if the in-force policy has sufficient surrender value to make the exchange worthwhile and if the insured remains in good health.

Whole Life

In the wake of the financial crisis some mutual companies have been aggressive in touting the benefits of participating WL and the guaranteed cash values associated with it. However, with respect to interest rates, the same forces are at work. The dividend interest rates in WL products are facing the same downward pressure as UL crediting rates. For in-force policies, if policy dividends are being used to offset premiums, additional premiums beyond what has been illustrated may be necessary or the policy could be put into reduced paid-up status or extended term at some point in the future if the required additional premiums are not paid. A key disadvantage of WL is lower premium flexibility relative to UL.

Some companies have made decisions with respect to their dividend interest rate that seem to defy conventional wisdom. One carrier announced that its dividend interest rate is going to increase in 2012. Figure 4 shows the dividend interest rate history for this carrier (Carrier A) compared to the WL benchmark and the dividend interest rate history of another mutual life insurance company (Carrier B).

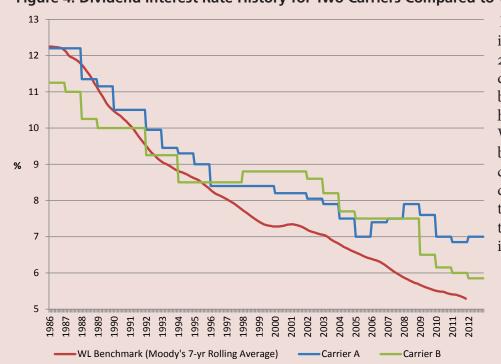


Figure 4: Dividend Interest Rate History for Two Carriers Compared to WL Benchmark

For both companies, the dividend interest rate divergence since 2007 has been stark. Carrier A's dividend interest rate has dropped by just 50 bps while Carrier B's has fallen by 165 bps (versus the WL Benchmark decline of 92 We can look at each bps). company's statutory financial data in Charts 6 and 7 (see page 8) to determine if they differed in their allocations asset or investment yields.

Note that both companies have a similar asset allocation and have seen reductions in their investment yields that are relatively consistent with the reductions in the WL benchmark. The statutory financial data does not explain why Carrier A is able to sustain, and even increase, its dividend interest rate during this period of low yields while other carriers are lowering their dividend interest rates. From the data it would appear that Carrier A's dividend interest rate is more susceptible to reductions in the future than Carrier B's dividend interest rate. However, it is possible (see sidebar on page 8) that Carrier A is applying other favorable experience, such as mortality or expenses, to offset lower portfolio earnings and compute a higher dividend interest rate.

Generally speaking, a declining interest rate scenario will impact UL products earlier than WL products (as shown in Chart 5). This lag can be attributed to the portfolios supporting WL products, which have longer durations than portfolios supporting UL products (hence the reason for the difference in the duration of the rolling averages between the UL and WL benchmarks). Despite this lag with WL products, the adverse impact will ultimately be seen. The lag also occurs when interest rates increase. The longer durations of the WL portfolios may cause WL products to be slower to respond positively in the event of a long-term rise in interest rates.

Chart 6: Asset Allocation of General Accounts for Two Whole Life Carriers

	Carrier A	Carrier B
Bonds	60.5%	63.0%
Preferred Stocks	0.4%	0.5%
Common Stocks	5.2%	4.8%
Mortgages	13.9%	13.8%
Real Estate	1.3%	1.1%
Policy Loans & Premium Notes	10.8%	9.3%
Cash & ST Investments	1.3%	1.0%
All Other Invested Assets	6.7%	6.6%
Total Cash & Invested Assets	100.0%	100.0%

Chart 7: Net Investment Yields* for Two Whole Life Carriers

	Carrier A	Carrier B
2006	6.31%	6.10%
2007	6.61%	6.05%
2008	6.47%	5.96%
2009	5.09%	5.64%
2010	5.37%	5.63%
Average	5.97%	5.88%

* Net investment yield includes net investment income but does not include realized and unrealized capital gains or losses. Investment data for 2011 is not available until March 2012.

No-Lapse Guaranteed UL

NLG policyowners are relatively insulated from the impact of lower rates. While NLG cash values would be impacted by lower crediting rates, most policies are not purchased for cash value. Because NLG premiums are guaranteed, the biggest risk to the policyholder is the risk of the carrier becoming insolvent.

Low interest rates do impact carrier earnings on NLG. One of the components in the pricing of NLG products is an assumption about the future return on investments by the carrier. As rates continue to drop, carriers may have difficulty in achieving assumed investment returns. Consequently, carriers may assume lower investment returns in pricing new NLG UL products, which would result in higher guarantee premiums. A sample of nine large U.S. life insurers that offer NLG indicates that prices have been increasing

Chart 8: Average Annual Change in No-Lapse Guarantee Premiums for Sample Carriers Indexed UL

2007	-3.0%
2008	-0.6%
2009	2.2%
2010	1.8%
2011	1.4%

since 2008 (see Chart 8).

Some companies have, at times, selectively priced their NLG UL product very competitively to obtain market share. But generally carriers ultimately change course, increasing prices when they have satisfied their sales targets.

The Difference: UL Crediting Rates vs. WL Dividend Interest Rates

The declared dividend interest rate in a participating WL policy has a very different application than a UL crediting rate. Therefore, dividend interest rates are not comparable on an absolute basis. In most participating WL policies, one part of the dividend is based on a formula using the declared dividend interest rate. The formula can be generically described as taking the excess of the declared dividend interest rate over the policy guaranteed rate, and multiplying it by the "policy value." While this formula is straightforward, its application varies widely by insurer and policy. For example, some insurers may make additional deductions from the declared dividend interest rate to cover expenses or mortality. Other policies will have multiple guaranteed interest rates from which to choose (e.g., one for policy cash surrender values and one for policy reserves). And, there is wide variation in what is used in "policy value"—it may be a reserve, a cash surrender value, the greater of two, a year-end value, or a *mid-year value, etc.*

Otherwise, WL products, in general, may be slightly more resilient to a declining interest rate scenario than UL products (as shown in Chart 5). This is because it is generally believed that the portfolios supporting WL products have longer durations than portfolios supporting UL products (hence the reason for the difference in the duration of the rolling averages between the UL and WL benchmarks). For the same reason, however, they may also be slower to respond positively in the event of a long-term rise in interest rates.

Because NLG involves a shift in risk from policyowner to the carrier, low interest rates do have an impact on carriers from a financial strength perspective. When investment returns are below the carrier's guaranteed pricing assumptions, they are required to post higher reserves for the business which impacts earnings and surplus levels (and potentially financial strength ratings). Since the primary risk to NLG UL policyowners is solvency risk, diversifying a large amount of coverage across two or more financially strong carriers is a worthwhile consideration.

Indexed UL

IUL products credit interest to policies based on the movement of a stock index, most commonly the S&P 500 index. The index crediting rate is usually subject to a participation rate (percentage of the index return), a maximum cap rate, and a minimum floor rate. One or more of these index levers is typically not guaranteed and can be changed by the carrier just like UL crediting rates. Policy assets supporting the index account are invested in the company's general account, not equities, just like UL policies.

To generate the index crediting rate, most companies fully hedge the risk to a third-party through the purchase of options, which is funded by income generated from the general account. The IUL crediting levers, and resulting crediting rate, are supported by the combination of investing in the general account (same as traditional UL) and purchasing a package of call options on the relevant equity index. A portion of the net premium (net of policy loads) is allocated to the general account, which earns a portfolio yield based primarily on investment grade bonds and mortgages. The general account yield supports the floor. As an example, if the general account is yielding 5 percent, the floor is 0, and the net premium is \$100, then \$95.24 will be allocated to the general account (100 / 1.05). By the end of the one-year segment term, the \$95.24 will grow to $$100 (95.24 \times 1.05)$, thereby providing the guaranteed floor of zero percent.

The remainder of the net premium (\$100-\$95.24=\$4.76) will be used to purchase a package of call options on the respective equity index. The package of call options will support the index return, including the cap. By hedging the index return, the insurer does not lose money if the return is below the floor, but also does not make money if the return is above the cap. All of the equity index return risk is transferred to a third party.

The hedging strategy described above is the prevailing industry approach to pricing an IUL crediting rate. However, other more exotic (and potentially more risky) pricing methods are employed by some insurers. These other pricing strategies may not be sustainable as the insurer retains more of the risk, which can be passed onto the policyholder through crediting lever changes. It is suggested that potential IUL buyers gain an understanding of the pricing and risks supporting the index crediting rate. Of primary concern is whether the pricing strategy is disciplined and sustainable.

Therefore, the determination of the cap rate, floor rate, and participation rate is largely tied to the general account portfolio yield and the price of the options tied to the index (see Example 3).

The effective cost as a percentage of the notional value of the call spread option should generally correspond to the net yield (net of the carrier's target interest spread) realized by the general account portfolio. The option pricing shown in Example 3 was supportable because at that time Pacific Life's general account crediting rates across various products were generally between 5.00 percent and 5.35 percent. While the price of the call spread option

Example 3: One-Year Call Spread Option Purchased by
Pacific Life in September 2010

Expiration Date	9/14/2011
Notional Value	\$31,880,000
0% Strike Price	1,121.10
12% Strike Price	1,255.63
Cost of Call Spread Option	\$1,692,828
Effective Cost as a % of Notional Value	5.31%

won't always so closely match the carrier's general account portfolio returns, the example above is instructive. (The effective cost in the prior month was 5.40 percent; in the following month it was 5.24 percent.)

If the general account portfolio yield drops but the cost of the call spread option remains the same, the carrier would face pressure to reduce the cap rate for the index account. Reducing the cap rate would reduce the cost of

the call spread option. However, if the general account yield drops but the cost of the call spread option also drops, then the carrier may be able to maintain the current cap rate for the product. Recent experience shows that the cost for option pricing packages has decreased, thereby offsetting lower portfolio yields. This has allowed some insurers, like Pacific Life, to maintain or even increase index cap rates while other companies have decreased their index cap rates.

If current interest rates remain low, causing carrier general account portfolio yields to decline further, there will be pressure for insurers to lower cap rates unless option prices also continue to decline. Policyowners would be wise to adjust their indexed UL return expectations in conjunction with their expectations for portfolio yields and consider funding the policy conservatively in accordance with downside scenario testing.

Conclusion

Financial markets have become extremely sensitized to risk and made a seismic shift to reduce risk in favor of safety. In addition, the global economic turmoil of recent years has led central banks to keep interest rates low in the attempt to stimulate economic growth. The combination of these factors and others has led to an environment where interest rates are near historically low levels with few signals that they will increase in the short to medium term. Life insurers are also extremely sensitized to risk (partly due to regulatory risk-based capital constraints) and are struggling to find suitable higher yield investment opportunities. As a result, life insurers are having difficulty maintaining the investment yields on their general account investment portfolios. If life insurers are experiencing lower investment returns, interest crediting on policies will be adjusted accordingly.

The implication for current policyowners is that they should plan on lower investment returns within their policies and make adjustments to ensure desired policy benefits can be maintained. Annual in-force policy reviews are critical—in-force illustrations on policies should be run with lower rate of return assumptions to stress test the policy and to determine if additional premium payments are advisable. Evaluating policy replacements should also be a consideration, particularly for older age clients where guarantees may be more important.

Prospective buyers should be cognizant of the factors that drive product performance and make a determination of the appropriate product type that best fits their objectives, price expectations, and risk tolerance. Risk-averse clients should be advised to adjust their expectations on investment returns for lower yields or to consider indexed UL products that could produce higher yields over the medium to long term, while still providing a minimum floor. Clients willing and able to accept some investment risk should be introduced to IUL and VUL, as these products could offer better investment returns that could ultimately reduce the cost of the policy over the long term. Note that many IUL and VUL products also offer attractive NLG riders that can provide guarantees out to the attained age 90s.

For More Information

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