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Considerations for Indexed Universal Life Under PBR

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Indexed universal life (IUL) is a form of universal life (UL) insurance that credits interest based on changes to a benchmark index. IUL policies have the potential to credit higher returns over traditional general account UL policies through participation in market growth while maintaining safety for the policyholder with guaranteed minimum rates.

Actuarial Guideline 49 (AG 49) was enacted in December 2015 and establishes for policy illustrations a benchmark crediting rate and a ceiling for index values. There were concerns that AG 49 would reduce the appeal of IUL. Despite this, 2016 was a record-setting year for IUL, nearly reaching \$2 billion¹ in sales, and the market continues to grow in 2017.

With the adoption of Valuation Manual 20 (VM-20) in 2016, principle-based reserves (PBR) became effective on Jan. 1, 2017, with an optional three-year phase-in period. This article highlights key considerations as companies begin to reserve for their IUL products under PBR.

The American Academy of Actuaries (the Academy) Life Principle-Based Approach Practice Note Work Group released a practice note² on May 18, 2017, to assist actuaries with the PBR implementation. In this practice note, it explicitly states that indexed life and indexed universal life policies are subject to VM-20.

NET PREMIUM RESERVE

The net premium reserve (NPR) for IUL is similar to that for other UL products. For an IUL policy with a secondary guarantee, the NPR is the maximum of three components:

- NPR—Main Guarantee (Section 3.B.5)
- NPR—Secondary Guarantee (Section 3.B.6)
- Cash Surrender Value

With minimal guidance on the IUL specific application of VM-20, companies are taking different approaches for the minimum credited rate. Options include using fixed account minimum guaranteed rates as well as using indexed rates

determined by the implied guarantee rate method (IGRM) found in Actuarial Guideline 36.

DETERMINISTIC RESERVE

The prescribed economic scenario for deterministic reserve (DR) may produce unintuitive results for IUL products. The Academy Life Reserves Work Group is conducting a survey of IUL writers to better determine the fitness of the DR calculation to IUL products.

The prescribed scenario (Section 7.G.1.c) is as follows:

The Scenario 12 interest rate yield curves and total investment returns are based on approximately a one standard deviation shock to the economic conditions as of the projection start date, where the shock is spread uniformly over the first 20 years of the projection.

The prescribed equity return results in low account value growth. The suppressed account value lowers profitability by lowering interest spread earned on account value (interest earned minus interest credited). For IUL designs with secondary guarantees, policies are more likely to be in-the-money. Based on analysis to date, the resulting DR is significantly higher than the SR, which is believed to be an unintended result.

In Table 1, a profit measure is presented for each scenario.³ The profit measure is calculated in each month as one annualized basis point of the account value at the end of the month. These monthly profits over 20 and 40 years respectively are then discounted to the policy issue date at 5 percent per annum. The comparison of the two columns demonstrates the increased crediting rate seen after policy year 20.

Table 1
Profit Measure

Percentile of SR scenarios	PV @ Issue of Profit Measure	
	Through PY20	Through PY40
Min	\$103.82	\$222.52
10th	103.88	222.69
20th	103.91	222.76
30th	103.93	222.82
40th	103.97	222.88
50th	103.98	222.90
60th	104.00	222.96
70th	104.03	223.12
80th	104.06	223.25
90th	104.07	223.27
100th	104.11	223.44
Max	104.17	223.53
DR Scenario	103.33	222.73

The DR scenario is outperformed by every single SR scenario over the 20-year period, and lags behind the 20th percentile of the SR scenarios over the 40-year period, indicating the strongly suppressed account value growth seen in the DR scenario.

In light of this, many companies are taking a “wait and see” approach, and it is not uncommon for pricing and forecasting models to adjust DR in anticipation of an update to the VM-20 for IUL.

STOCHASTIC RESERVE

Section 6 of VM-20 describes the stochastic exclusion test (SET), which can be used to identify groups of policies that do not have material interest rate or asset return volatility risk. Companies may elect to use this test to exclude groups of policies from the calculation of the stochastic reserve (SR). According to Section 6.A.1.b of VM-20, products with a clearly defined hedging strategy cannot be excluded from the SR requirement, which inherently excludes IUL products from the SET.

Companies are allowed to use simplifications, approximations or modeling efficiency techniques to calculate their SR. For example, fewer than 10,000 scenarios may be used if the company can demonstrate that this does not understate the reserve by a material amount. If used, these considerations must be fully documented in the PBR report described in VM-31.

ASSUMPTIONS

Premium Funding

Premium funding assumptions are a significant driver of reserves under PBR. Consistency in assumptions and methodology between pricing and valuation is required to prevent artificial reserve variances from occurring. In addition, a mechanism should be considered to adjust modeled premium to prevent over/under funding, as earned rates, option budgets, caps and indexed credit rates will vary by PBR scenario.

Moreover, PBR requires certain sensitivity tests to be performed. Section 9.A.7 of VM-20 specifies requirements for performing sensitivity tests “to understand the materiality of prudent estimate assumptions on the modeled reserve.” Section 9.D.4.b of VM-20 requires “for policies that give policyholders flexibility in the timing and amount of premium payments” that the following four sensitivities are run at a minimum:

- Minimum premium scenario,
- no further premium payment scenario,
- pre-payment of premiums—single premium scenario, and
- re-payment of premiums—level premium scenario.



The above scenarios can be used to examine the sensitivity of the reserve to the premium payment pattern assumption. The impact on the PBR reserve may be particularly adverse for IUL products depending on the pattern of investment, COI and expense margins. The premium payment prudent estimate assumption should be formed in light of these sensitivity test results. VM-31 also requires these results to be disclosed in the PBR report.

Non-Guaranteed Elements

Non-guaranteed elements (NGE), as defined in Section 1.C.12 of VM-20, refer to charges or credits to a policyholder’s account value, benefit, premium or consideration that are both established and which may be adjusted at the discretion of an insurance company.

Under PBR, the DR and SR are calculated using projected cash flows under prudent estimate assumptions reflecting a “moderately adverse” view of future experience. The projected NGE should follow the company’s strategy, consider past practices and be consistent with the assumptions and emerging experience used in each scenario (VM-20, Section 7.C.2).



Like all other assumptions, VM-20 requires that the NGEs include a margin. Therefore, companies may choose not to fully reflect the projected experience in the model as doing so could eliminate the margin built into the prudent estimate assumption. For example, companies may assume that current cost of insurance (COI) rates are adjusted based on changes in the projected mortality. However, to account for efficiency, reaction time, implementation costs and secondary effects not explicitly modeled, only a portion (e.g., 50 percent) of the extra mortality will be recouped through increased COI rates.

Indexed Crediting

Under PBR, the DR and SR require projecting assets and liabilities under different economic scenarios which are generated “on the fly” at future valuation dates. The caps need to be solved for along the scenario path and compared to the index growth rates to determine the credited rates.

Companies may utilize the portfolio rate arising from the asset liability projections, solve for the option budget and indexed caps dynamically and credit the modeled index account accordingly.

Practices regarding the setting of PBR margins for indexed products are emerging. As a result, companies should build flexibility into their models to allow for testing the impact of various alternative scenarios.

CONCLUSION

PBR implementation for IUL can be more complicated relative to implementation for general account UL. The additional computation requirements for the DR and SR, treatment of hedge costs, and policyholder behavior modeling are primary considerations for companies when evaluating the impact of PBR on IUL products. ■

The views expressed in the article are those of the authors and not representative of Oliver Wyman’s.



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ENDNOTES

- 1 Wink’s Sales & Market Report, 78th edition, <http://www.thinkadvisor.com/2017/03/03/indexed-universal-life-insurance-sales-hit-new-hig>.
- 2 <https://www.actuary.org/index.php?q=content/work-group-releases-practice-note-life-principle-based-reserves-under-vm-20>.
- 3 Assume a policy with \$1,000,000 face amount is issued to a 30-year-old non-smoking male. \$10,000 is contributed annually. COI rates are based on 2008 VBT Ultimate. Expenses and premium loads are not considered for simplicity. Interest rate credited is floored and capped at an annualized rate of 1 percent and 5 percent, respectively. All rates are applied monthly.