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New SPIA Interest Rates in VM-22

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In 2015, the Standard Valuation Law (SVL) Interest Rate Modernization Work Group of the American Academy of Actuaries (Academy) was formed at the request of the VM-22 Subgroup of the Life Actuarial Task Force (LATF) of the National Association of Insurance Commissioners (NAIC) to review the valuation rate framework in place at the time and recommend changes to "modernize" the framework, if appropriate. The Academy group initially focused on Single Premium Immediate Annuities (SPIAs) and similar contracts. Their work culminated in the adoption of changes to the valuation interest rate regime for these contracts for the first time in more than 30 years.

As noted briefly in the March issue of *The Financial Reporter*, the statutory valuation rate changes took effect for contracts issued on or after Jan. 1, 2018. Products initially in scope for the new rate methodology are:

- Single premium group annuities (pension risk transfer),
- immediate annuities,
- deferred immediate annuities (DIAs),
- structured settlements,
- payout annuities (settlement options),
- supplementary contracts and
- living benefits (GLWBs) and contingent deferred annuities (CDAs) once account value is exhausted.[1]

A high-level comparison of the prior methodology and the resulting new methodology is shown in Table 1.

The interest rates used in the valuation of pension risk transfer (PRT) buyout transactions were identified as one example where the existing regime may have been out of date. Over the last decade, PRT transactions with single premiums over a billion dollars have become commonplace. Assuming the valuation rates are intended to be related to the yield on the assets purchased to back a given liability, the prior methodology, based on average annual yields, had started to make less sense to appropriately reserve for these infrequent, but potentially substantial, transactions. The "lumpiness," i.e., disproportionately large sporadic transactions rather than fairly continual transactions throughout the year, of these so-called "jumbo" transactions was one of the factors which led regulators to ask the Academy to help them with the development of a new interest rate methodology.

Furthermore, it was determined that the credit quality of the index employed in the prior method may no longer accurately reflect the assets insurers are purchasing to back these liabilities. Also, under the prior regime, there was also only a single valuation rate regardless of the duration of the liability. Taken together, these features of the prior methodology could require carriers to post asset adequacy testing (AAT) reserves.

In light of these concerns, the Academy established the following principles to guide their efforts in the development of the methodology which was ultimately adopted, with minor modifications, by the NAIC:

Table 1
Prior Versus New Methodology For SPIAs and Similar Contracts

		Prior	New
A	Reference Index	Moody's Long-Term Corporate Bond Index	Treasuries plus VM-20 Spreads
B	Credit Quality	Moody's Index	Based on Average Life Insurer Bond Portfolio
C	Prudence	20 percent of reference rate in excess of 3 percent	VM-20 Baseline Defaults and Spread Deduction
D	Floor	None, but bias toward 3 percent	None
E	Valuation Rate Buckets	One	Four to reflect duration differences
F	Frequency of Updates	Annual	Quarterly (non-jumbo) / Daily(jumbo)
G	Rounding	Nearest 25bp	Non-jumbo: nearest 25bp Jumbo: nearest 1bp

1. Valuation rates based on asset portfolios backing the liabilities.
2. Inclusion of appropriate prudence.
3. Equal treatment across companies.
4. Avoidance of perverse incentives.
5. Consistency with other recent statutory frameworks.
6. Daily valuation rate is ideal.
7. Optimal tradeoff of accuracy and effort.

To address the concerns, the new framework incorporates many changes. To address the "lumpiness" issue, there will now be different rates for "jumbo" contracts (initial premium greater than or equal to $250 million) and "non-jumbo" contracts; jumbo contracts will use a rate that is updated daily, whereas non-jumbo contracts will use a rate that is updated quarterly. In line with the goal of achieving consistency across statutory frameworks, the new methodology uses U.S. Treasuries plus VM-20 credit spreads and expected defaults. In order to avoid enticing companies to invest in riskier assets in order to have a higher discount rate, the credit quality distribution is based on the public bond portion of an average life insurer's asset portfolio. Finally, there are now four different valuation rates to reflect differences in liability duration. For simplicity, there is a mapping based on two liability characteristics highly correlated with duration, namely age and the "reference period" (generally the certain period).

For contracts or certificates without life contingencies, valuation rate buckets are assigned based on the length of the reference period[2] (RP), as shown in Table 2.

For contracts or certificates with life contingencies, valuation rate buckets are assigned based on the length of the reference period and the initial age of the annuitant, as shown in Table 3.

The impact of the new regime on valuation rates can be significant, especially for shorter duration liabilities. Table 4 provides a comparison of the valuation rates under the prior and new regimes for contracts issued during the fourth quarter of 2017.

The exhibit shows a 1.5 percent decrease in the interest rate for short duration liabilities (A), a 1 percent and 75 basis point decrease for moderate duration liabilities (B & C), respectively, and a 25 basis point decrease for long duration liabilities (D).

The NAIC publishes these rates on its website.[3] However, it still may be helpful for the practitioner to understand how the rates are calculated. The formula for non-jumbo rates is $I_q = R + S - D - E$, where:

Table 2
Valuation Rate Buckets For Contracts Without
Life Contingencies

RP ≤ 5Years	5Y < RP ≤ 10Y	10Y < RP ≤ 15Y	RP > 15Y
A	B	C	D

Table 3
Valuation Rate Buckets For Contracts Without
Life Contingencies

Initial Age	RP ≤ 5Years	5Y < RP ≤ 10Y	10Y < RP ≤ 15Y	RP > 15Y
90+	A	B	C	D
80-89	B	B	C	D
70-79	C	C	C	D
<70	D	D	D	D

- R is the Treasury reference rate,
- S is the defined spread,
- D is the VM-20 default cost, and
- E is the spread deduction (always equal to 0.25 percent).

As an example, let's examine a sample non-jumbo valuation rate calculation for a SPIA issued on March 2, 2018, life-only, to a 68-year-old. Based on Table 3, this contract would fall in valuation rate bucket D, the longest duration bucket. The derivation of the various components of the valuation rate calculation is shown in Table 5 (pg. 20). Based on those calculated components, I_q is equal to 2.62017% + 1.29698% − 0.29670% − 0.25%, or 3.37045%. Rounding to the nearest 25 basis points we get 3.25%.

The formula for calculating jumbo rates is $I_d = I_q + C_d - C_q$ where:

- I_q is the quarterly valuation rate for the calendar quarter preceding the business day immediately preceding the contract's premium determination date;

- C_d is the daily corporate rate for the business day immediately preceding the contract's premium determination date; and

- C_q is the average daily corporate rate corresponding to the period used to develop I_q, which is the calendar quarter preceding the calendar quarter during which I_q is the quarterly valuation rate.

Table 4
Prior Versus New SPIA Valuation Rates

Statutory Maximum Valuation Interest Rate for Non-Jumbo Contracts					
	New Regime				Prior Regime
	Valuation Rate Buckets				All Contracts
Premium Determination Date	RP <= 5Y **A**	5Y < RP <= 10Y **B**	10Y < RP <= 15Y **C**	RP > 15Y **D**	
10/1/2017–12/31/2017	2.25%	2.75%	3.00%	3.5%	3.75%

Table 5
Derivation Of Components Of Valuation Rate

	Average Treasury Rate	Weight	Expected Spread	Weight	Expected Default Costs	Weight
2 Year	1.69%	2.23032%	0.59425%	2.23032%	0.19860%	2.23032%
5 Year	2.07%	7.52528%	0.79005%	7.52528%	0.26792%	7.52528%
10 Year	2.37%	26.26320%	1.03202%	26.26320%	0.30153%	90.24441%
30 Year	2.82%	63.98120%	1.48987%	63.98120%		
	R	**2.62017%**	**S**	**1.29698%**	**D**	**0.29670%**

As an example, take a sample jumbo valuation rate calculation for a SPIA issued on March 2, 2018, life-only, to a 68-year-old. I_q equals 3.481%, which is the unrounded Q4 2017 non-jumbo rate. C_d equals 4.256%, the daily rate for March 1, 2018. And C_q equals 3.968%, the average of daily rates for Q4 2017. Therefore, I_d = 3.481% + 4.256% − 3.968% = 3.769%. Rounding to the nearest basis point, we get 3.77%. ∎

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ENDNOTES

1 The scope of products to be included in VM-22 is under review by regulators at the time of article submission. Also under consideration is the option to use the original issue date for policies that annuitize from a deferred annuity contract if it can be shown the underlying investments did not materially change as a result of the benefit election.

2 Reference period means the length of time, rounded to the nearest year, from the premium determination date to the date of the last non-life-contingent payment under the individual contract or group certificate, as applicable.

3 Rates will be published by the NAIC at *http://www.naic.org/index_industry.htm.* The text of the regulation is at *http://www.naic.org/documents/cmte_a_latf_related _vm22_170407_adoption.docx.* For background on the development of the regulation, see *https://www.actuary.org/committees/dynamic/SVLMODERNIZATION.*