VM-22: MAXIMUM VALUATION INTEREST RATES FOR INCOME ANNUITIES

**Guidance Note:** Over time, the NAIC intends for VM-22 to contain the valuation requirements for all annuity products not covered by VM-21. For now, the purpose of VM-22 is limited to prescribing the valuation interest rates, but not the valuation methodology, to be used for some, but not all, of the products that are within the intended scope of VM-22. All reserve requirements for non-variable annuities that are not within the defined scope of VM-22 (I. A and I. B below) are contained in Appendices VM-A and VM-C. These reserve requirements are not intended to change the reserve requirements for annuities in the accumulation phase. The valuation interest rates for the products in the defined scope of VM-22 (I.A and I. B below) supersede those described in Appendices VM-A and VM-C, but they do not otherwise change how those Appendices are to be interpreted. VM-C IX.B provided guidance on valuation interest rates and is therefore superseded by these requirements for products in scope. Any interest rate references in VM-C IX-C are also superseded by these requirements.

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Section 1. Purpose and Scope

1. These requirements form part of the Commissioner’s Annuity Reserve Valuation Method (CARVM) (and Commissioner’s Reserve Valuation Method(CRVM) for certain contracts[[1]](#footnote-1)) for single premium immediate annuity contracts and other similar contracts or supplementary contracts, and define, for policies, contracts or supplementary contracts issued after December 31, 2017, the maximum valuation interest rate determined as of the Premium Determination Date that complies with the Standard Valuation Law (SVL).
2. The following categories of annuities or contract features, whether group or individual, including both life contingent and term certain only contracts, directly written or assumed through reinsurance, are covered by this Section of the Valuation Manual:
3. Immediate annuity contracts;
4. Deferred income annuity contracts;
5. Structured settlements in payout or deferred status;
6. Payout annuities resulting from settlement options or annuitizations from other contracts;
7. Supplementary contracts; and
8. Contracts containing other similar fixed income payment streams, including those attributable to contingent deferred annuities and guaranteed lifetime income benefits once the underlying contract funds are exhausted.

Section 2. Definitions

1. Portfolio Credit Quality Distribution – This term means the prescribed asset credit rating distribution as follows:
   * + 5% Treasuries
     + 15% Aa bonds (5% Aa1, 5% Aa2, 5% Aa3)
     + 40% A bonds (13.33% A1, 13.33% A2, 13.33% A3)
     + 40% Baa bonds (13.33% Baa1, 13.33% Baa2, 13.33% Baa3)

**Guidance Note**: The credit quality designations above have the same meaning as in VM-20, subsection 9.F.3.

1. Daily Treasury Rate – This term means the Daily Treasury Yield Curve Rate for a given maturity as published by the U.S. Department of the Treasury.

**Guidance Note:** The source for these rates is: [https://www.treasury.gov](https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yield)

1. Expected Default Cost – This term means a vector of annual default costs by weighted average life calculated as a weighted average of the VM-20 prescribed annual default costs (Table A) in effect for the quarter prior to the Premium Determination Date for the Portfolio Credit Quality Distribution, as published on the Life Actuarial Task Force (LATF) website of the NAIC.
2. Reference Period - This term 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.

**Guidance** **Note**:The definition of Reference Period assumes a series of material, substantially similar payments and materiality is relative to the life-contingent payments. If the payments are not substantially similar, the actuary should apply prudent judgment and select the Valuation Rate Bucket with Macaulay duration that is a best fit to the Macaulay duration of the payments in question.

1. Jumbo Contract – This term means a contract with an initial consideration equal to or greater than $250,000,000. Considerations for contracts issued to the same party within 90 days shall be combined for purposes of determining whether a contract meets this threshold.
2. Non-jumbo Contract – This term means a contract that does not meet the definition of the Jumbo Contract.
3. Expected Spread – This term means a vector of spreads by weighted average life, calculated as a weighted average of the VM-20 prescribed spreads (Table F) for the quarter prior to the Premium Determination Date for the Portfolio Credit Quality Distribution, as published on the Life Actuarial Task Force (LATF) website of the NAIC.
4. Quarterly Treasury Rate – This term means the average of the Daily Treasury Rates defined in Subsection 2B above for a given maturity over the calendar quarter prior to the Premium Determination Date.
5. Premium Determination Date – This term means the date upon which the premium is determined by the insurance company and is committed to by the client. This term is generally defined as the issue date. For supplementary contracts and annuitizations, this would normally be the date of election of the supplementary contracts and the annuitizations, but a company may use the valuation rate basis in effect when the original contract was issued with domestic commissioner approval.

**Guidance Note:**  The Premium Determination Date is intended to be a date proximate to the date of the investment of the assets that support the contract.  As examples,

* for a group annuity for which the company locks in investment yields at the time of a quote, but the contract is issued subsequently, that “lock-in-date” should be used by the company on a consistent basis;
* for a single-premium immediate annuity contract, this would normally be the issue date;
* for a supplementary contract, however, this date would normally be the date of annuitization.  The definition permits, subject to the domestic commissioner’s approval, the use of some other date.  An example of such a situation includes using the issue date of the original deferred annuity contract for annuitizations. Approval would normally be granted when the domestic commissioner has been provided satisfactory demonstration that the company employs an appropriate asset/liability matching strategy.

1. Initial Age – Age as of the last birthday as of the Premium Determination Date. For joint life contracts or certificates, the Initial Age means the Initial Age of the younger annuitant. For contracts with impaired lives being valued using a rated age, Initial Age means the rated age. For contracts with impaired lives being valued using a substandard mortality table, Initial Age is based on an equivalent rated age.

Section 3. Determination of the Statutory Maximum Valuation Interest Rate

1. Valuation Rate Buckets
2. For the purpose of the calculation of the statutory maximum valuation interest rate, each contract or certificate is to be assigned to one of four Valuation Rate Buckets labeled A through D.
3. For contracts or certificates without life contingencies, Valuation Rate Buckets are assigned based on the length of the Reference Period (RP), as follows:

Table 1

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

1. For contracts or certificates with life contingencies, Valuation Rate Buckets are assigned based on the length of the Reference Period (RP) and the Initial Age of the annuitant, as follows:

Table 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Initial Age | RP ≤ 5Y | 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 |

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1. Except as provided in Subsection 3A.5 below, for group annuity contracts, the statutory maximum valuation rate shall be determined separately for each certificate holder, based on their Initial Age and the certificate Reference Period.
2. For group annuity contracts purchased under a retirement or deferred compensation plan with multiple annuity form options available to the certificate holder, the statutory maximum valuation rate shall be based on the normal form of payout as defined in the contract or as is evidenced by the underlying pension plan documents or census file. If the normal form of payout cannot be determined, the statutory maximum valuation rate shall be based on the most conservative annuity form available to the certificate holder.

B. Maximum Valuation Interest Rate

1. The statutory maximum valuation interest rate is determined based on the Valuation Rate Bucket defined in Subsection 3A and the Premium Determination Date of the contract or certificate
2. Quarterly Valuation Rate is defined as follows:

Iq = R + S – D – E

Where:

* 1. R is the Reference Rate defined in Subsection 3C;
  2. S is the Spread defined in Subsection 3D;
  3. D is the Default Cost defined in Subsection 3E; and
  4. E is the spread deduction defined as 0.25%.

1. Daily Valuation Rate is defined as follows:

Id = Iq + Cd – Cq

Where:

1. Iq is the Quarterly Valuation Rate for the calendar quarter preceding the business day immediately preceding the contract’s Premium Determination Date;
2. Cd is the Daily Corporate Rate defined in Subsection 3F for the business day immediately preceding the contract’s Premium Determination Date; and
3. Cq is the Average Daily Corporate Rate defined in Subsection 3F corresponding to the period used to develop Iq , which is the calendar quarter preceding the calendar quarter during which Iq is the Quarterly Valuation Rate.

**Guidance Note**: As an example, for a contract with an 8/17/17 Premium Determination Date, the dates associated with the variables for the Daily Valuation Rate would be as follows:

**Iq: 6/30/17**

**Cd: 8/16/17**

**Cq =** the average Daily Corporate Rate over the period 1/1/17 to 3/31/17.

1. For Jumbo Contracts, the statutory maximum valuation interest rate is the Daily Valuation Rate rounded to the nearest one-hundredth of one percent (1/100 of 1%).
2. For Non-jumbo Contracts, the statutory maximum valuation interest rate is the Quarterly Valuation Rate rounded to the nearest one-fourth of one percent (1/4 of 1%).
3. Reference Rate

The Reference Rate is the weighted average of the Quarterly Treasury Rates calculated using the following weights based on the contract’s Valuation Rate Bucket:

Table 3

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weights** | | | | |
| **Bucket** | **2 Year** | **5 Year** | **10 Year** | **30 Year** |
| **A** | 26.8% | 51.6% | 20.7% | 0.9% |
| **B** | 10.1% | 30.3% | 50.0% | 9.6% |
| **C** | 4.7% | 15.8% | 50.2% | 29.2% |
| **D** | 2.5% | 8.3% | 28.8% | 60.5% |

**Guidance Note:** Unrounded weights are used in the calculation. Appendix 1 explains how the weights are developed.

D. Spread

The spread is the weighted average of the Expected Spreads calculated using the following weights based on the contract’s Valuation Rate Bucket:

Table 4

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weights** | | | | |
| **Bucket** | **2 Year** | **5 Year** | **10 Year** | **30 Year** |
| **A** | 26.8% | 51.6% | 20.7% | 0.9% |
| **B** | 10.1% | 30.3% | 50.0% | 9.6% |
| **C** | 4.7% | 15.8% | 50.2% | 29.2% |
| **D** | 2.5% | 8.3% | 28.8% | 60.5% |

E. Default Cost

The Default Cost is the weighted average of the Expected Default Costs calculated using the following weights based on the contract’s Valuation Rate Bucket:

Table 5

|  |  |  |  |
| --- | --- | --- | --- |
| **Weights** | | | |
| **Bucket** | **2 Year** | **5 Year** | **10 Year** |
| **A** | 26.8% | 51.6% | 21.6% |
| **B** | 10.1% | 30.3% | 59.6% |
| **C** | 4.7% | 15.8% | 79.4% |
| **D** | 2.5% | 8.3% | 89.3% |

**Guidance Note:** These weights are based on duration and asset liability cash flow matching analysis for representative annuities within each Valuation Rate Bucket. Tables 3 to 5 are identical, except that for Table 5, the 10 year and 30 year columns are combined since VM-20 default rates are only published for maturities of up to 10 years.

F. Daily Corporate Rate

The Daily Corporate Rate is the weighted average of the Bank of America Merrill Lynch U.S. corporate effective yields calculated using the following weights based on the contract’s Valuation Rate Bucket:

Table 6

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Weights** | | | | | | |
| **Bucket** | **1Y – 3Y** | **3Y- 5Y** | **5Y – 7Y** | **7Y – 10Y** | **10Y – 15Y** | **+15Y** |
| **A** | 26.8% | 25.8% | 25.8% | 10.3% | 10.3% | 0.9% |
| **B** | 10.1% | 15.2% | 15.2% | 25.0% | 25.0% | 9.6% |
| **C** | 4.7% | 7.9% | 7.9% | 25.1% | 25.1% | 29.2% |
| **D** | 2.5% | 4.1% | 4.1% | 14.4% | 14.4% | 60.5% |

The Average Daily Corporate Rate means the average of the Daily Corporate Rates over a given calendar quarter.

**Guidance Note:** The columns correspond to the groupings that Bank of America Merrill Lynch publishes. The source for these rates is the [St. Louis Federal Reserve website:](https://research.stlouisfed.org/fred2/categories/32347) https://research.stlouisfed.org/fred2/categories/32347

* + - To access a specific series, search the St. Louis Fed website for the series name by inputting the name into the Search box in the upper right corner, or input the following web address: https://research.stlouisfed.org/fred2/series/[replace with series name from below].
    - Index Series Names:

|  |  |
| --- | --- |
| **Maturity** | **Series Name** |
| 1Y - 3Y | BAMLC1A0C13YEY |
| 3Y - 5Y | BAMLC2A0C35YEY |
| 5Y - 7Y | BAMLC3A0C57YEY |
| 7Y - 10Y | BAMLC4A0C710YEY |
| 10Y - 15Y | BAMLC7A0C1015YEY |
| 15Y+ | BAMLC8A0C15PYEY |

**Guidance Note:**  LATF intends to review the weights in the above tables 3-6, and when necessary, update them to better reflect changes in the shape of the yield curve and/or the level of market interest rates.  A brief description of the weight calculation methodology is provided in Attachment A.

G. Multiple Premiums

The prescribed methodology applies to single premium contracts providing fixed benefits. For contracts involving multiple premium payments, the benefits purchased by each premium shall be valued using the valuation interest rate in effect at the time the premium was determined and committed to by the purchaser.

H. Immaterial Premium Change

If the premium changes by an immaterial amount subsequent to the original Premium Determination Date, such as due to a data correction, the original Premium Determination Date shall be used.

**Appendix 1**

In the fourth quarter of each calendar year, the weightings used within each Valuation Rate Bucket for determining the applicable valuation interest rates for the following calendar year will be updated using the following process:

1. Each Valuation Rate Bucket has a set of representative annuity forms. These annuity forms are as follows:
   1. Bucket A:
      1. Single Life Annuity age 91 with 0 and 5-year certain periods
      2. 5-year certain only
   2. Bucket B:
      1. Single Life Annuity age 80 and 85 with 0, 5, and 10-year certain periods
      2. 10-year certain only
   3. Bucket C:
      1. Single Life Annuity age 70 with 0 and 15-year certain periods
      2. Single Life Annuity age 75 with 0, 10 and 15-year certain periods
      3. 15-year certain only
   4. Bucket D:
      1. Single Life Annuity age 55, 60, and 65 with 0 and 15-year certain periods
      2. 25-year certain only
2. Annual cash flows are projected assuming annuity payments are made at the end of each year. These cash flows are averaged for each Valuation Rate Bucket across the annuity forms for that Bucket using the statutory valuation mortality table effective for the following calendar year for individual annuities for males.
3. The average daily rates in the third quarter for the 2-yr, 5-yr, 10-yr and 30-yr US Treasuries are calculated as input to calculate the present values in step 4.
4. The average cash flows are summed into four time period groups: years 1-3, years 4-7, years 8-15 and years 16-30. (Note, the present value of cash flows beyond year 30 is included in the years 16-30 Bucket. This present value is based on the lower of 3% and the 30-year Treasury rate input in Step3.)
5. The present value of each summed cash flow group in Step 4 is then calculated by using the Step 3 US Treasury rates for the mid-point of that group (and using the linearly interpolated US Treasury rate when necessary).
6. The duration weighted present value of the cash flows is determined by multiplying the present value of the cash flow groups by the midpoint of the time period for each applicable group.
7. Weightings for each cash flow time period group within a Valuation Rate Bucket are calculated by dividing the duration weighted present value of the cash flow by the sum of the duration weighted present value of cash flow for each Valuation Rate Bucket. Note, unrounded weights are used to calculate the single valuation rate for each Valuation Rate Bucket.

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1. 1 SVL Section 5.C.(2) Group annuity and pure endowment contracts purchased under a retirement plan or plan of deferred compensation, established or maintained by an employer (including a partnership or sole proprietorship) or by an employee organization, or by both, other than a plan providing individual retirement accounts or individual retirement annuities under Section 408 of the Internal Revenue Code, as now or hereafter amended. [↑](#footnote-ref-1)