

Griffith, Ballard & Company

Valuation Interest Rate Calculations

For use during Valuation Year 2019

Based on Actual Rates through June 30, 2019

MOODY'S CORPORATE AVERAGE YIELDS

Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19		
4.31%	4.29%	4.38%	4.54%	4.64%	4.49%	4.45%	4.31%	4.24%	4.15%	4.08%	3.89%		
12-Month Average: 2018:				4.05%	2017:		4.05%	2016:		4.39%	36-Month Average: 2018:		4.16%

CURRENT YEAR PROJECTED AVERAGES

	Average	projected if future monthly average changes by					
		-0.50%	+0.50%	-1.00%	+1.00%	-2.00%	+2.40%
12-month average	4.31%	4.31%	4.31%	4.31%	4.31%	4.31%	4.31%
36-month average	4.14%	4.14%	4.14%	4.14%	4.14%	4.14%	4.14%
Lower	4.14%	4.14%	4.14%	4.14%	4.14%	4.14%	4.14%

PROJECTED VALUATION RATES, BASED ON ABOVE

	Rate	Change from prior yr.	projected if future monthly average changes by					
			-0.50%	+0.50%	-1.00%	+1.00%	-2.00%	+2.40%
Life Formula	3.50%	0.25%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Life Reserve*	3.50%	0.00%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Life Nonfor Fctr	4.50%	0.00%	4.50%	4.50%	4.50%	4.50%	4.50%	4.50%
Flex Prem DA**	3.75%	0.25%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%
Single Prem DA**	3.75%	0.25%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%

* Minimum change from prior year rate is 0.50%

** for Type C, 10 years and fewer, issue-year basis

NON-JUMBO* IMMEDIATE ANNUITY (< \$250 M Initial Deposit)

Statutory Maximum Valuation Rates for Premium Determination Dates below:

	1/1/19-3/31/19	4/1/19-6/30/19	7/1/19-9/30/19	10/1/19-12/31/19
A	3.50%	3.00%	2.75%	2.25%
B	3.75%	3.50%	3.00%	2.50%
C	4.00%	3.75%	3.25%	2.75%
D	4.25%	4.00%	3.50%	3.00%

NON LIFE CONTINGENT

RP <= 5	A
5 < RP <= 10	B
10 < RP <= 15	C
RP > 15	D

see VM-22 3.A.2 (Table 1)

LIFE CONTINGENT

Issue Age:	< 70	70-79	80-89	90+
RP <= 5	D	C	B	A
5 < RP <= 10	D	C	B	B
10 < RP <= 15	D	C	C	C
RP > 15	D	D	D	D

see VM-22 3.A.3 (Table 2)

* For Jumbo Annuities, please consult the NAIC website for rates: http://www.naic.org/pbr_data.htm?tab_1

SINGLE PREMIUM DEFERRED ANNUITY

ISSUE-YEAR BASIS	2019				2018			
	Duration	Ref*	A	B	C	Ref*	A	B
5 Years or Less	4.31%	4.00%	3.75%	3.75%	4.05%	4.00%	3.75%	3.50%
5+ to 10 Years	4.31%	4.00%	3.75%	3.75%	4.05%	3.75%	3.75%	3.50%
10+ to 20 Years	4.14%	3.75%	3.75%	3.50%	4.05%	3.75%	3.50%	3.50%
Greater than 20 Years	4.14%	3.50%	3.50%	3.50%	4.05%	3.50%	3.50%	3.50%

FLEXIBLE PREMIUM DEFERRED ANNUITY

ISSUE-YEAR BASIS	2019				2018			
	Duration	Ref*	A	B	C	Ref*	A	B
5 Years or Less	4.31%	4.00%	3.75%	3.75%	4.05%	3.75%	3.75%	3.50%
5+ to 10 Years	4.31%	4.00%	3.75%	3.75%	4.05%	3.75%	3.75%	3.50%
10+ to 20 Years	4.14%	3.75%	3.50%	3.50%	4.05%	3.75%	3.50%	3.50%
Greater than 20 Years	4.14%	3.50%	3.50%	3.50%	4.05%	3.50%	3.25%	3.25%

* 12- preceding month average (if greater than 10 years, use 36- preceding month average, if lower)

DYNAMIC MINIMUM ANNUITY NONFORFEITURE RATES

Five-Year Constant Maturity Treasury (Monthly Average) and Related Minimum Guarantee Rates

	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18
5-Yr CMT:	2.05%	2.18%	2.38%	2.60%	2.63%	2.70%	2.82%	2.78%	2.78%	2.77%
Minimum Rate:	1.00%	1.00%	1.15%	1.35%	1.40%	1.45%	1.55%	1.55%	1.55%	1.50%
	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19
5-Yr CMT:	2.89%	3.00%	2.95%	2.68%	2.54%	2.49%	2.37%	2.33%	2.19%	1.83%
Minimum Rate:	1.65%	1.75%	1.70%	1.45%	1.30%	1.25%	1.10%	1.10%	1.00%	1.00%