

**Projected 2021 Valuation Interest Rates for Deferred Annuities
Based on Data Through March 2021**

Basis: Issue Year
Cash Settlement: Yes
Future Interest Rate Guarantees: Yes

Year	Plan Type A				Plan Type B				Plan Type C			
	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20
2010	5.25%	5.00%	4.75%	4.25%	4.75%	4.75%	4.50%	4.00%	4.50%	4.50%	4.25%	4.00%
2011	5.00%	4.75%	4.50%	4.00%	4.50%	4.50%	4.25%	3.75%	4.25%	4.25%	4.00%	3.75%
2012	4.25%	4.25%	4.00%	3.75%	4.00%	4.00%	3.75%	3.50%	3.75%	3.75%	3.75%	3.50%
2013	4.00%	3.75%	3.75%	3.50%	3.75%	3.75%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
2014	4.50%	4.25%	4.00%	3.75%	4.00%	4.00%	3.75%	3.50%	3.75%	3.75%	3.75%	3.50%
2015	4.00%	4.00%	3.75%	3.50%	3.75%	3.75%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
2016	4.00%	4.00%	4.00%	3.75%	3.75%	3.75%	3.75%	3.50%	3.75%	3.75%	3.75%	3.50%
2017	3.75%	3.75%	3.75%	3.50%	3.75%	3.75%	3.50%	3.25%	3.50%	3.50%	3.50%	3.25%
2018	3.75%	3.75%	3.75%	3.50%	3.75%	3.75%	3.50%	3.25%	3.50%	3.50%	3.50%	3.25%
2019	4.00%	4.00%	3.75%	3.50%	3.75%	3.75%	3.50%	3.50%	3.75%	3.75%	3.50%	3.50%
2020	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.00%	3.25%	3.25%	3.25%	3.00%
2021*	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%

* Projected values assuming the average monthly bond yield is equal to the March 2021 rate (3.38%) for the remaining measurement period.

Increase Breakpoints

	Plan Type A				Plan Type B				Plan Type C			
	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20
Rate	4.38%	4.42%	4.52%	4.87%	4.59%	4.59%	4.75%	5.18%	4.75%	4.75%	4.87%	5.18%
Change	1.00%	1.04%	1.14%	1.49%	1.21%	1.21%	1.37%	1.80%	1.37%	1.37%	1.49%	1.80%
Val. Rate	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%

Decrease Breakpoints

	Plan Type A				Plan Type B				Plan Type C			
	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20
Rate	3.12%	3.08%	2.98%	2.63%	2.91%	2.91%	2.74%	2.32%	2.74%	2.74%	2.63%	2.32%
Change	-0.26%	-0.30%	-0.40%	-0.75%	-0.47%	-0.47%	-0.64%	-1.06%	-0.64%	-0.64%	-0.75%	-1.06%
Val. Rate	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%

Breakpoints are based on an immediate change in the monthly average bond yield.

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Basis: Issue Year
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Year	Plan Type A				Plan Type B				Plan Type C			
	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20
2010	5.25%	5.25%	5.00%	4.50%	4.75%	4.75%	4.50%	4.00%	4.50%	4.50%	4.50%	4.00%
2011	5.00%	5.00%	4.75%	4.25%	4.50%	4.50%	4.25%	4.00%	4.25%	4.25%	4.25%	4.00%
2012	4.25%	4.25%	4.00%	3.75%	4.00%	4.00%	3.75%	3.50%	3.75%	3.75%	3.75%	3.50%
2013	4.00%	4.00%	3.75%	3.50%	3.75%	3.75%	3.75%	3.50%	3.75%	3.75%	3.50%	3.50%
2014	4.50%	4.50%	4.00%	3.75%	4.00%	4.00%	3.75%	3.50%	4.00%	4.00%	3.75%	3.50%
2015	4.00%	4.00%	3.75%	3.50%	3.75%	3.75%	3.75%	3.50%	3.75%	3.75%	3.50%	3.50%
2016	4.25%	4.00%	4.00%	3.75%	4.00%	4.00%	3.75%	3.50%	3.75%	3.75%	3.75%	3.50%
2017	4.00%	3.75%	3.75%	3.50%	3.75%	3.75%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
2018	4.00%	3.75%	3.75%	3.50%	3.75%	3.75%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
2019	4.00%	4.00%	3.75%	3.50%	3.75%	3.75%	3.75%	3.50%	3.75%	3.75%	3.50%	3.50%
2020	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%
2021*	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%

* Projected values assuming the average monthly bond yield is equal to the March 2021 rate (3.38%) for the remaining measurement period.

Increase Breakpoints

	Plan Type A				Plan Type B				Plan Type C			
	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20
Rate	4.34%	4.38%	4.47%	4.75%	4.52%	4.52%	4.66%	5.00%	4.66%	4.66%	4.75%	5.00%
Change	0.96%	1.00%	1.09%	1.37%	1.14%	1.14%	1.28%	1.62%	1.28%	1.28%	1.37%	1.62%
Val. Rate	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%

Decrease Breakpoints

	Plan Type A				Plan Type B				Plan Type C			
	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20
Rate	3.16%	3.12%	3.03%	2.74%	2.98%	2.98%	2.84%	2.49%	2.84%	2.84%	2.74%	2.49%
Change	-0.22%	-0.26%	-0.35%	-0.64%	-0.40%	-0.40%	-0.54%	-0.89%	-0.54%	-0.54%	-0.64%	-0.89%
Val. Rate	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%

Breakpoints are based on an immediate change in the monthly average bond yield.

**Projected 2021 Valuation Interest Rates for Deferred Annuities
Based on Data Through March 2021**

Basis: Change in Fund
Cash Settlement: Yes
Future Interest Rate Guarantees: Yes

Year	Plan Type A				Plan Type B				Plan Type C			
	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20
2010	5.50%	5.50%	5.25%	4.75%	5.25%	5.25%	5.00%	4.75%	4.50%	4.50%	4.50%	4.00%
2011	5.25%	5.25%	5.00%	4.50%	5.00%	5.00%	4.75%	4.50%	4.25%	4.25%	4.25%	4.00%
2012	4.50%	4.50%	4.25%	4.00%	4.25%	4.25%	4.25%	4.00%	3.75%	3.75%	3.75%	3.50%
2013	4.00%	4.00%	4.00%	3.75%	4.00%	4.00%	3.75%	3.75%	3.75%	3.75%	3.50%	3.50%
2014	4.75%	4.50%	4.50%	4.00%	4.50%	4.50%	4.25%	4.00%	4.00%	4.00%	3.75%	3.75%
2015	4.25%	4.00%	4.00%	3.75%	4.00%	4.00%	4.00%	3.75%	3.75%	3.75%	3.50%	3.50%
2016	4.25%	4.25%	4.00%	3.75%	4.25%	4.25%	4.00%	3.75%	3.75%	3.75%	3.75%	3.50%
2017	4.00%	4.00%	3.75%	3.75%	4.00%	4.00%	3.75%	3.75%	3.50%	3.50%	3.50%	3.50%
2018	4.00%	4.00%	3.75%	3.75%	4.00%	4.00%	3.75%	3.75%	3.50%	3.50%	3.50%	3.50%
2019	4.25%	4.25%	4.00%	3.75%	4.00%	4.00%	4.00%	3.75%	3.75%	3.75%	3.75%	3.50%
2020	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%
2021*	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%

* Projected values assuming the average monthly bond yield is equal to the March 2021 rate (3.38%) for the remaining measurement period.

Increase Breakpoints

	Plan Type A				Plan Type B				Plan Type C			
	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20
Rate	4.28%	4.31%	4.38%	4.59%	4.34%	4.34%	4.42%	4.59%	4.66%	4.66%	4.75%	5.00%
Change	0.90%	0.93%	1.00%	1.21%	0.96%	0.96%	1.04%	1.21%	1.28%	1.28%	1.37%	1.62%
Val. Rate	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%

Decrease Breakpoints

	Plan Type A				Plan Type B				Plan Type C			
	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20
Rate	3.22%	3.19%	3.12%	2.91%	3.16%	3.16%	3.08%	2.91%	2.84%	2.84%	2.74%	2.49%
Change	-0.16%	-0.19%	-0.26%	-0.47%	-0.22%	-0.22%	-0.30%	-0.47%	-0.54%	-0.54%	-0.64%	-0.89%
Val. Rate	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%

Breakpoints are based on an immediate change in the monthly average bond yield.

**Projected 2021 Valuation Interest Rates for Deferred Annuities
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Year	Plan Type A				Plan Type B				Plan Type C			
	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20
2010	5.75%	5.50%	5.25%	4.75%	5.50%	5.50%	5.25%	4.75%	4.75%	4.75%	4.50%	4.25%
2011	5.25%	5.25%	5.00%	4.50%	5.25%	5.25%	5.00%	4.50%	4.50%	4.50%	4.25%	4.00%
2012	4.50%	4.50%	4.25%	4.00%	4.50%	4.50%	4.25%	4.00%	4.00%	4.00%	3.75%	3.75%
2013	4.25%	4.00%	4.00%	3.75%	4.00%	4.00%	4.00%	3.75%	3.75%	3.75%	3.75%	3.50%
2014	4.75%	4.75%	4.50%	4.00%	4.50%	4.50%	4.50%	4.00%	4.00%	4.00%	4.00%	3.75%
2015	4.25%	4.25%	4.00%	3.75%	4.00%	4.00%	4.00%	3.75%	3.75%	3.75%	3.75%	3.50%
2016	4.50%	4.25%	4.25%	4.00%	4.25%	4.25%	4.00%	4.00%	3.75%	3.75%	3.75%	3.75%
2017	4.00%	4.00%	4.00%	3.75%	4.00%	4.00%	3.75%	3.75%	3.75%	3.75%	3.50%	3.50%
2018	4.00%	4.00%	4.00%	3.75%	4.00%	4.00%	3.75%	3.75%	3.75%	3.75%	3.50%	3.50%
2019	4.25%	4.25%	4.00%	3.75%	4.25%	4.25%	4.00%	3.75%	3.75%	3.75%	3.75%	3.50%
2020	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%
2021*	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%

* Projected values assuming the average monthly bond yield is equal to the March 2021 rate (3.38%) for the remaining measurement period.

Increase Breakpoints

	Plan Type A				Plan Type B				Plan Type C			
	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20
Rate	4.25%	4.28%	4.34%	4.52%	4.31%	4.31%	4.38%	4.52%	4.59%	4.59%	4.66%	4.87%
Change	0.87%	0.90%	0.96%	1.14%	0.93%	0.93%	1.00%	1.14%	1.21%	1.21%	1.28%	1.49%
Val. Rate	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%

Decrease Breakpoints

	Plan Type A				Plan Type B				Plan Type C			
	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20	X≤5	5<X≤10	10<X≤20	X>20
Rate	3.25%	3.22%	3.16%	2.98%	3.19%	3.19%	3.12%	2.98%	2.91%	2.91%	2.84%	2.63%
Change	-0.13%	-0.16%	-0.22%	-0.40%	-0.19%	-0.19%	-0.26%	-0.40%	-0.47%	-0.47%	-0.54%	-0.75%
Val. Rate	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%

Breakpoints are based on an immediate change in the monthly average bond yield.

**Projected 2021 Valuation Interest Rates for Deferred Annuities
Based on Data Through March 2021**

Observations:

The final valuation rate for 2021 will not be known until July 2021 when the average bond yield for June is published by Moody's Investors Service. The measurement period is nearly complete so the projected valuation rates for 2021 are stabilizing. It looks like the 2021 valuation interest rate for deferred annuities may be 3.00% across the board.

An increase relative to the current projected values seems very unlikely at this stage as this would require an immediate increase in the monthly average bond yield between 87 and 180 bp.

Decreases relative to the current projected value requires smaller changes in the monthly average bond yield than increases, but many categories require a significant decrease in the monthly average bond yield before the valuation rate will decline to 2.75%. A 25 bp decrease relative to the current projected values will be triggered by the following decreases in the monthly average bond yield:

Issue Year Basis	Type A	Guarantee Durations \leq 10 Years	22 to 30 bp decrease
		Guarantee Durations $>$ 10 Years	35 to 75 bp decrease
	Type B & C	Guarantee Durations \leq 10 Years	40 to 64 bp decrease
		Guarantee Durations $>$ 10 Years	54 to 106 bp decrease
Change in Fund Basis	Type A	Guarantee Durations \leq 10 Years	13 to 19 bp decrease
		Guarantee Durations $>$ 10 Years	22 to 47 bp decrease
	Type B & C	Guarantee Durations \leq 10 Years	19 to 54 bp decrease
		Guarantee Durations $>$ 10 Years	26 to 89 bp decrease

The change in fund basis is slightly more susceptible to a potential decrease relative to the current projected values. The short-term (guarantee durations \leq 10 years) Type A rates require less than a 15 bp decrease in the monthly average bond yield in order for the valuation rate to decline to 2.75%.