

2021 Valuation and Nonforfeiture Interest Rates for Life Insurance

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Disclosure

This paper was developed to provide a general overview of the issues related to its subject matter. The comments and recommendations contained in this paper are not intended to provide specific consulting advice or a statement of actuarial opinion. The unique situation of an individual company should always be considered in determining an appropriate response.

Background

Dynamic Nature: Since the addition of the 1980 Amendments to the Standard Valuation Law, the maximum valuation interest rates for life insurance and annuity products have been dynamic. The maximum valuation interest rates are calculated based on a recent average of the Moody's Corporate Bond Yield Average (the same interest rate that is used to determine the maximum rate of interest for policy loans).

While the maximum valuation interest rates are recalculated annually in July based on the reported values of the Moody's Corporate Bond Yield Average through June, the formula that is used to establish the maximum valuation interest rate for life insurance contracts was developed such that the effective rate is expected to be stable for a relatively long period of time. For example, the maximum valuation interest rate last changed in 2013.

Valuation Interest Rate: The relatively low interest rate environment over the past several months has triggered a reduction in the maximum valuation interest rate for life insurance contracts that will become effective on January 1, 2021. The maximum valuation interest rate for life insurance contracts that guarantee coverage for more than 20 years will be decreasing from 3.5% to 3.0%. This change will only affect new life insurance contracts issued on or after January 1, 2021 and it will result in an increase in minimum statutory reserves relative to similar contracts issued in 2020.

The reduction in the maximum valuation interest rate will affect the minimum statutory reserves for all life insurance contracts regardless of whether a given contract is subject to VM-20 (principle-based reserves). Distinctions between different reserving methods will be made as needed in the analysis of the individual issues resulting from this change.

Nonforfeiture Interest Rate: The maximum nonforfeiture interest rate is also dynamic as it is tied to the maximum valuation interest rate. The maximum nonforfeiture interest rate is equal to 125% of the maximum valuation interest rate, rounded to the nearest quarter of one percent, but not less than 4%. The maximum nonforfeiture interest rate for contracts that guarantee coverage for more than 20 years will be decreasing from 4.5% to 4.0%. This change will only affect new life insurance contracts issued on or after January 1, 2021 and it will result in an increase in statutory minimum nonforfeiture values relative to similar contracts issued in 2020. Unlike the change in the maximum valuation interest rate, however, companies may elect to defer the recognition of the new maximum nonforfeiture interest rate for previously approved forms for up to one year.

Basic and Net Level Premium Reserves

Issue: The decrease in the maximum valuation interest rate will result in an increase in the level of the basic reserve (contracts exempt from VM-20) and the net level premium reserve (contracts subject to VM-20). Since the impact is similar, no further distinctions between the two reserve methods will be made.

Impact: The impact on the resulting reserve varies greatly depending on the product type. A comparison of the impact on a range of different product types is shown in the appendix. The reduction in the maximum valuation interest rate has the largest impact on single premium and limited payment whole life insurance, particularly at younger issue ages, and the smallest impact on term life insurance with relatively short level premium periods.

The increased reserves will result in greater surplus strain and delayed breakeven points relative to similar products sold in 2020.

Response: Valuation systems must be updated to report the correct reserve amounts for life insurance contracts issued in 2021 no later than end of Q1 2021. Premium or other pricing adjustments may be desired for product lines where the increase in reserves is significant (e.g., single premium whole life). Ideally, any such pricing adjustments would be implemented on January 1, 2021; however, depending on sales volumes of key products early in the calendar year, a delayed implementation could be acceptable.

Deficiency Reserves & Deterministic Exclusion Testing

Issue: The reduction in the maximum valuation interest rate will require higher gross premiums relative to similar contracts issued in 2020 to either avoid deficiency reserves (for contracts exempt from VM-20) or pass the deterministic exclusion test (for contracts that are subject to VM-20 and eligible for the deterministic exclusion test). If any resulting deficiencies are not corrected, it will be necessary to hold deficiency reserves and/or calculate deterministic reserves.

Impact: The impact will vary depending on how close the current gross premiums are to the different thresholds in 2020. With respect to deficiency reserves, if your gross premium rates were set equal to the valuation net premium using the most favorable mortality table possible without the use of x-factors (this is a common strategy for indeterminate premium whole life insurance contracts), it will be necessary to increase premium rates in order to continue avoiding deficiency reserves. If you are relying on x-factors to avoid deficiency reserves, there is a good chance that at least some of your current premium rates will be deficient under the new valuation interest rate. Similar considerations apply to the deterministic exclusion test, but without the complication of x-factors.

Please note that any premium rate adjustments could affect the modified endowment contract status of individual pricing cells.

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Response: While it is not possible to avoid higher basic or net premium reserves, it is possible to avoid deficiency reserves and the need to calculate a deterministic reserve for plans that are eligible for the deterministic exclusion test. If the objective is to avoid holding deficiency reserves and/or calculating deterministic reserves where possible, the gross premium rates should be reviewed to determine the adjustments that are necessary to achieve this objective and any such adjustments must be implemented no later than January 1, 2021.

Nonforfeiture Values

Issue: The reduction in the maximum nonforfeiture interest rate will result in an increase in statutory minimum nonforfeiture values relative to similar contracts issued in 2020.

Impact: The impact to statutory minimum cash values is very similar to the impact of the reduction in the maximum valuation interest rate on basic and net premium reserves. Unlike reserves, however, many companies routinely offer cash values in excess of the statutory minimum requirements. There are a number of methods for achieving this outcome and a very common method is to use an interest rate that is less than the maximum nonforfeiture interest rate. For example, there are already a fair number of products in the market with cash values (or surrender charges in the case of universal life insurance) calculated based on an interest rate of 4%. Products such as this will require no maintenance to maintain compliance with statutory minimum nonforfeiture values.

Unlike reserves, an increase in cash values will have an impact on the company's cash flows and any material increase in cash values will reduce profit margins. Any such reduction will be a function of both the amount by which cash values are increased and the company's actual lapse rates. Since the highest lapse rates typically occur in the first policy year, this impact could be minor for many products.

Response: Review currently marketed policy forms to determine whether nonforfeiture values must be adjusted to maintain compliance. If adjustments are required, they must be implemented no later than January 1, 2022 if the company elects to defer the recognition of the new maximum nonforfeiture interest rate for one year. There may be some synergies and expense savings associated with implementing updated reserve and nonforfeiture values contemporaneously that should be considered in developing a timeline.

Premium or other pricing adjustments may be desired for product lines where the increase in cash values is significant (e.g., single premium whole life). Ideally, any such pricing adjustments would be implemented in conjunction with the updated nonforfeiture values.

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Profit Studies

Given that the reduction in the maximum valuation and nonforfeiture interest rates was triggered by a significant reduction in the yield available on new bonds, this could be a good time to update profit studies for key products to reflect any changes in the outlook for future interest rates as well as any updates to reserves and nonforfeiture benefits.

HEROES Act

The HEROES Act contains some highly anticipated changes to the interest rates that are used to demonstrate compliance with the federal definition of life insurance under IRC §7702 and to calculate the 7-pay premium limit that is used to determine whether a contract is a modified endowment contract under IRC §7702A. If these provisions are included in the passage of a final bill, companies will have greater latitude in determining the nonforfeiture interest rate (this will give companies the ability to significantly reduce surplus strain associated with single premium whole life insurance product while still offering competitive cash value growth) and companies will be able use higher 7-pay premium limits for modified endowment contract testing. While the fate of the HEROES Act is uncertain, I remain hopeful that these provisions will find their way into law in the very near future.

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Trilogy Actuarial Solutions is available to assist your organization with the issues identified in this paper. You may contact us by phone, email, or through our website. We would be happy to schedule a time to review your situation and collect the information that we need to develop a specific proposal at no expense or obligation to you.

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Appendix – Mean Reserves per Thousand of Face Amount

Single Premium Whole Life Insurance

Issue Age	Interest Rate	Year				
		1	5	10	20	30
5	3.50%	72.94	83.36	98.57	135.94	187.71
	3.00%	103.33	115.98	134.03	177.23	234.44
	% Inc.	42%	39%	36%	30%	25%
35	3.50%	193.73	219.32	256.17	350.12	470.59
	3.00%	240.96	268.42	307.19	402.68	520.40
	% Inc.	24%	22%	20%	15%	11%
45	3.50%	264.35	299.81	350.12	470.59	618.62
	3.00%	315.67	352.04	402.68	520.40	659.68
	% Inc.	19%	17%	15%	11%	7%
55	3.50%	360.90	406.73	470.59	618.62	774.26
	3.00%	413.41	458.57	520.40	659.68	801.39
	% Inc.	15%	13%	11%	7%	4%
65	3.50%	484.20	541.45	618.62	774.26	889.14
	3.00%	533.43	587.72	659.68	801.39	903.51
	% Inc.	10%	9%	7%	4%	2%

10-Pay Whole Life Insurance

Issue Age	Interest Rate	Year				
		1	5	10	20	30
5	3.50%	3.81	42.33	98.57	135.94	187.71
	3.00%	5.40	58.37	134.03	177.23	234.44
	% Inc.	42%	38%	36%	30%	25%
35	3.50%	10.33	110.32	256.17	350.12	470.59
	3.00%	12.82	134.04	307.19	402.68	520.40
	% Inc.	24%	22%	20%	15%	11%
45	3.50%	14.07	151.02	350.12	470.59	618.62
	3.00%	16.78	175.94	402.68	520.40	659.68
	% Inc.	19%	17%	15%	11%	7%
55	3.50%	19.45	203.29	470.59	618.62	774.26
	3.00%	22.24	227.58	520.40	659.68	801.39
	% Inc.	14%	12%	11%	7%	4%
65	3.50%	26.28	267.33	618.62	774.26	889.14
	3.00%	28.85	288.31	659.68	801.39	903.51
	% Inc.	10%	8%	7%	4%	2%

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Appendix – Mean Reserves per Thousand of Face Amount

20-Pay Whole Life Insurance

Issue Age	Interest Rate	Year				
		1	5	10	20	30
5	3.50%	0.04	22.12	54.35	135.94	187.71
	3.00%	0.04	29.89	72.53	177.23	234.44
	% Inc.	0%	35%	33%	30%	25%
35	3.50%	0.35	56.70	138.52	350.12	470.59
	3.00%	0.35	67.68	163.47	402.68	520.40
	% Inc.	0%	19%	18%	15%	11%
45	3.50%	0.52	78.17	189.91	470.59	618.62
	3.00%	0.52	89.36	214.77	520.40	659.68
	% Inc.	0%	14%	13%	11%	7%
55	3.50%	1.16	104.57	251.80	618.62	774.26
	3.00%	1.16	114.99	274.15	659.68	801.39
	% Inc.	0%	10%	9%	7%	4%
65	3.50%	2.77	139.28	328.42	774.26	889.14
	3.00%	2.77	147.71	345.27	801.39	903.51
	% Inc.	0%	6%	5%	4%	2%

Whole Life Insurance

Issue Age	Interest Rate	Year				
		1	5	10	20	30
5	3.50%	0.04	11.28	27.68	68.00	123.83
	3.00%	0.04	14.14	34.28	82.46	146.25
	% Inc.	0%	25%	24%	21%	18%
35	3.50%	0.35	32.07	77.76	194.24	343.59
	3.00%	0.35	36.51	87.57	213.32	368.36
	% Inc.	0%	14%	13%	10%	7%
45	3.50%	0.52	48.70	117.04	280.71	481.81
	3.00%	0.52	53.64	127.59	299.52	502.93
	% Inc.	0%	10%	9%	7%	4%
55	3.50%	1.16	72.77	172.57	403.90	647.12
	3.00%	1.16	78.06	183.33	420.47	661.74
	% Inc.	0%	7%	6%	4%	2%
65	3.50%	2.77	113.44	262.61	563.46	785.52
	3.00%	2.77	118.78	272.58	575.41	793.64
	% Inc.	0%	5%	4%	2%	1%

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Appendix – Mean Reserves per Thousand of Face Amount

10-Year Level Premium Term Life Insurance

Issue Age	Interest Rate	Year				
		1	3	5	7	10
5	3.50%	0.16	0.36	0.49	0.55	0.31
	3.00%	0.17	0.36	0.49	0.55	0.31
	% Inc.	6%	0%	0%	0%	0%
35	3.50%	0.35	0.71	0.76	0.69	0.52
	3.00%	0.35	0.72	0.77	0.69	0.52
	% Inc.	0%	1%	1%	0%	0%
45	3.50%	0.52	1.24	1.78	1.98	1.04
	3.00%	0.52	1.25	1.79	1.99	1.05
	% Inc.	0%	1%	1%	1%	1%
55	3.50%	1.16	3.23	4.51	4.83	2.52
	3.00%	1.17	3.25	4.53	4.84	2.53
	% Inc.	1%	1%	0%	0%	0%
65	3.50%	2.77	8.92	13.03	14.21	6.95
	3.00%	2.78	8.98	13.08	14.23	6.97
	% Inc.	0%	1%	0%	0%	0%

20-Year Level Premium Term Life Insurance

Issue Age	Interest Rate	Year				
		1	3	5	10	15
5	3.50%	0.16	0.82	1.46	2.70	2.21
	3.00%	0.17	0.84	1.48	2.71	2.20
	% Inc.	6%	2%	1%	0%	0%
35	3.50%	0.35	1.09	1.55	2.45	3.04
	3.00%	0.35	1.11	1.57	2.48	3.05
	% Inc.	0%	2%	1%	1%	0%
45	3.50%	0.52	3.04	5.52	10.28	10.21
	3.00%	0.52	3.10	5.61	10.36	10.21
	% Inc.	0%	2%	2%	1%	0%
55	3.50%	1.16	7.78	13.98	26.10	27.84
	3.00%	1.17	7.93	14.22	26.34	27.89
	% Inc.	1%	2%	2%	1%	0%
65	3.50%	2.77	25.41	47.47	94.65	108.64
	3.00%	2.78	25.97	48.39	95.70	108.95
	% Inc.	0%	2%	2%	1%	0%

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Appendix – Mean Reserves per Thousand of Face Amount

30-Year Level Premium Term Life Insurance

Issue Age	Interest Rate	Year				
		1	5	10	15	20
5	3.50%	0.16	2.20	4.52	5.33	5.19
	3.00%	0.17	2.26	4.59	5.38	5.21
	% Inc.	6%	3%	2%	1%	0%
35	3.50%	0.35	3.82	8.06	12.63	15.43
	3.00%	0.35	3.96	8.30	12.87	15.56
	% Inc.	0%	4%	3%	2%	1%
45	3.50%	0.52	11.72	25.62	36.60	42.48
	3.00%	0.52	12.12	26.27	37.22	42.83
	% Inc.	0%	3%	3%	2%	1%
55	3.50%	1.16	34.31	76.76	116.20	144.24
	3.00%	1.17	35.66	79.07	118.60	145.86
	% Inc.	1%	4%	3%	2%	1%
65	3.50%	2.77	96.97	220.69	339.76	429.19
	3.00%	2.78	100.73	227.20	346.69	434.33
	% Inc.	0%	4%	3%	2%	1%

Calculation Notes:

All reserve calculations are based on the following common assumptions:

Female Insured with a Non-Tobacco Rate Class

Mortality: 2017 CSO (F) NS U ANB

Semi-Continuous CRVM Reserves