

LIFE INSURANCE - OPTION 2 - DRAFT

LR025

Basis of Factors

The factors ~~chosen~~developed represent surplus needed to provide for ~~excess claims over life insurance mortality risk, which is defined as adverse variance in life insurance deaths (i.e., insureds dying sooner than expected, both from random fluctuations and from inaccurate pricing for future levels) over the remaining lifetime of claims. For a large number block of trials, each insured either lives or dies based on a “roll of the dice” business while appropriately reflecting the probability of death from both normal and excess claims. pricing flexibility to adjust current mortality rates for emerging experience. The present value of mortality risks included in the claims generated by this process, less expected claims, will be the amount of surplus needed under that trial.~~development of the factors were volatility, level, trend, and catastrophe. The factors chosen~~under~~were developed by stochastically simulating the formula produce a level of surplus at least as much~~run-off of in force life insurance blocks typical of U.S. life insurers.~~

~~The capital need, expressed as needed in 95 percent of a dollar amount, is determined as the trials–greatest present value of accumulated deficiencies at the 95th percentile of the stochastic distribution of scenarios over the remaining lifetime of a block of business while appropriately reflecting the pricing flexibility to adjust current mortality rates. Statutory losses are defined as the after-tax quantification of gross death benefits minus reserves released minus mortality margin present in reserves. The after-tax statutory losses are discounted to the present by using 20-year averages for U.S. swap rates. By selecting the largest present value accumulated loss across all projection years, the solved for capital ensures non-negative capital at all projection periods. Earlier period losses are not allowed to be offset by later period gains to reduce capital. The 95th percentile is the commonly accepted statistical safety level used for Life RBC C-2 mortality risk to identify weakly capitalized companies. The after-tax capital needs are translated to a factor expressed as a percentage of the net amount at risk (NAR). The pre-tax factor is determined by taking the after-tax factor divided by (1 minus the tax rate).~~

~~The model was developed for portfolios of 10,000, 100,000 and one million lives, and it was found that the surplus needs decreased with larger portfolios, consistent with the law of large numbers.~~

~~Net amount at risk was chosen as a base because expected claims are difficult to calculate on a consistent basis from company to company. The factors are differentiated between individual & industrial life and group & credit life, and by in force block size. Within individual & industrial life, the factors are differentiated into categories by contract type depending on the degree of pricing flexibility. Within group & credit life, the factors are differentiated into categories by the remaining length of the premium rate term by group contract. There are distinct factors for contracts that have remaining premium rate terms 36 months and under and for contracts that have remaining premium rate terms over 36 months. The Federal Employees’ Group Life Insurance (FEGLI) and Servicemembers’ Group Life Insurance (SGLI) receive a separate factor applied to the amounts in force.~~

Specific Instructions for Application of the Formula

Lines ~~3, 42, 5~~ and ~~9-21-41~~ are not applicable to Fraternal Benefit Societies.

~~Annual statement reference is for the total net amount at risk for the category (e.g., Individual & Industrial is one category). The net amount at risk is then further broken down by size as in a tax table to reflect the decrease in risk for larger blocks of life insurance. This breakdown will not appear on the RBC filing software or on the printed copy, as the application of factors to amounts in force is completed automatically. The calculation is as follows:~~

~~The NAR is derived for each of the factor categories using annual statement sources and company records. In Force and Reserves amounts are net of reinsurance throughout. The In Force amounts throughout derived from company records need to be consistent with the Exhibit of Life Insurance. The Reserves amounts throughout derived from company records need to be consistent with Exhibit 5, Separate Accounts Exhibit, and Schedule S.~~

~~Pricing Flexibility for Individual Life Insurance is defined as the ability to materially adjust rates on in force contracts through changing premiums and/or non-guaranteed elements as of the valuation date and within the next 5 policy years. A material rate adjustment is defined as the ability to recover, on a present value basis, the difference in mortality~~

provided for in the factors below for contracts with and without pricing flexibility.

Lines (11) and (12) Life Policies with Pricing Flexibility In Force and Reserves are derived from company records. Examples of products intended for this category include, but aren't limited to, participating whole life insurance, universal life insurance without secondary guarantees, and yearly renewable term insurance where scheduled premiums may be changed on an annual basis from the date of issue. The table below illustrates the RBC requirement calculation embedded in Line (13) for Life Policies with Pricing Flexibility.

<u>Line</u>	<u>Individual & Industrial Life Policies with Pricing Flexibility</u>	(1) <u>Statement Value</u>	<u>Factor</u>	(2) <u>RBC Requirement</u>
	First 500 Million	_____	X 0.0022300190 =	_____
	Next 424,500 Million	_____	X 0.0014600075 =	_____
	Next 20,000 Million	=====	X 0.00116= =	=====
	Over 25,000 Million	_____	X 0.0008700050 =	_____
	Total Individual & Industrial Life Policies with Pricing Flexibility Net Amount at Risk	=====		=====

<u>Line (20)</u>	<u>Group & Credit</u>	<u>Statement Value</u>	<u>Factor</u>	<u>RBC Requirement</u>
	First 500 Million	=====	X 0.00175 =	=====
	Next 4,500 Million	=====	X 0.00116 =	=====
	Next 20,000 Million	=====	X 0.00087 =	=====
	Over 25,000 Million	=====	X 0.00078 =	=====

Lines (14) and (15) Term Life Policies without Pricing Flexibility In Force and Reserves are derived from company records. Examples of products intended for this category include, but aren't limited to, level term insurance with guaranteed level premiums and yearly renewable term insurance where scheduled premiums may not be changed. The table below illustrates the RBC requirement calculation embedded in Line (16) for Term Life Policies without Pricing Flexibility.

<u>Line (16)</u>	<u>Term Life Policies without Pricing Flexibility</u>	(1) <u>Statement Value</u>	<u>Factor</u>	(2) <u>RBC Requirement</u>
	First 500 Million	_____	X 0.00270 =	_____
	Next 24,500 Million	_____	X 0.00110 =	_____
	Over 25,000 Million	_____	X 0.00075 =	_____
	Total Group & Credit Term Life Policies without Pricing Flexibility Net Amount at Risk (less FEGLI & SGLI in force)	=====		=====

Lines (17) and (18) Permanent Life Policies without Pricing Flexibility In Force and Reserves are derived from the aggregate amounts derived in lines (1) to (10) minus the amounts recorded in the other individual life categories. Examples of products intended for this category include, but aren't limited to, universal life with secondary guarantees and non-participating whole life insurance. Policies that aren't recorded in the other individual life categories default to this category which has the highest factors. The table below illustrates the RBC requirement calculation embedded in Line (19) for Permanent Life Policies without Pricing Flexibility.

(1) (2)

<u>Line (19)</u>	<u>Permanent Life Policies without Pricing Flexibility</u>	<u>Statement Value</u>	<u>Factor</u>	<u>RBC Requirement</u>
	<u>First 500 Million</u>		X 0.00390 =	
	<u>Next 24,500 Million</u>		X 0.00165 =	
	<u>Over 25,000 Million</u>		X 0.00110 =	
	<u>Total Permanent Life Policies without Pricing Flexibility</u>			
	<u>Net Amount at Risk</u>			

Lines (35) and (36) Group & Credit Life In Force and Reserves with Remaining Rate Terms 36 Months and Under are derived from company records. This category includes group contracts where the premium terms have 36 months or fewer until expiration or renewal. The in force amount classified in this category needs to be consistent with the Exhibit of Life Insurance. The reserves amount classified in this category needs to be consistent with Exhibit 5 used for Lines (28) and (29), Separate Accounts Exhibit used for Line (30), and Schedule S used for Lines (31) and (32). Federal Employees' Group Life Insurance (FEGLI) and Servicemembers' Group Life Insurance (SGLI) contracts are excluded. The table below illustrates the RBC requirement calculation embedded in Line (37) for Group & Credit Life Net Amount at Risk with Remaining Rate Terms 36 Months and Under.

<u>Line (37)</u>	<u>Group & Credit Life with Remaining Rate Terms 36 Months and Under</u>	<u>(1) Statement Value</u>	<u>Factor</u>	<u>(2) RBC Requirement</u>
	<u>First 500 Million</u>		X 0.00130 =	
	<u>Next 24,500 Million</u>		X 0.00045 =	
	<u>Over 25,000 Million</u>		X 0.00030 =	
	<u>Total Group & Credit Life Net Amount at Risk with Remaining Rate Terms 36 Months and Under</u>			

Lines (38) and (39) Group & Credit Life In Force and Reserves with Remaining Rate Terms Over 36 Months are derived from the aggregate amounts derived in lines (21) to (34) minus the Group & Credit Life In Force and Reserves with Remaining Rate Terms 36 Months and Under in lines (35) and (36). FEGLI and SGLI contracts are excluded. The table below illustrates the RBC requirement calculation embedded in Line (40) for Group & Credit Life Net Amount at Risk with Remaining Rate Terms Over 36 Months.

<u>Line (40)</u>	<u>Group & Credit Life with Remaining Rate Terms Over 36 Months</u>	<u>(1) Statement Value</u>	<u>Factor</u>	<u>(2) RBC Requirement</u>
	<u>First 500 Million</u>		X 0.00180 =	
	<u>Next 24,500 Million</u>		X 0.00070 =	
	<u>Over 25,000 Million</u>		X 0.00045 =	
	<u>Total Group & Credit Life Net Amount at Risk with Remaining Rate Terms Over 36 Months</u>			

Line (41) FEGLI/SGLI In Force amounts are retrieved from the Exhibit of Life Insurance. The capital factor assigned is the same as the largest size band for group & credit life contracts with remaining rate terms 36 months and under.

<u>Line (41)</u>	<u>FEGLI/SGLI In Force</u>	<u>(1) Statement Value</u>	<u>Factor</u>	<u>(2) RBC Requirement</u>
			X 0.00030 =	

All amounts should be entered as required. The risk-based capital software will calculate the RBC requirement for individual and industrial and for group and credit.

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