

## Risk Mitigation through Hedging

### LR0XX (adjacent to Replication Synthetic Asset Transactions (RSAT))

#### *Hedging*

The concept of hedging credit, equity and other risks is widely accepted and understood among insurers and their regulators. In order for regulators to distinguish between insurers that have effectively reduced their risks from those insurers that have not, the risk based capital computation should be sensitive to such differences. Increasing or decreasing exposure to different asset classes in relation to a benchmark asset allocation tailored to meet the long term obligations to policy owners is critical to successfully managing an insurance company. Hedging is the process of using derivative instruments to most efficiently limit risk associated with a particular asset in a manner consistent with the insurer's long term objectives. The relative advantage of using cash market transactions versus derivative market transactions depends upon market conditions.

The NAIC model investment laws and regulations establish specific constraints on the use of derivatives. Governance of derivative use starts with approved and documented authorities from the insurer's Board of Directors to management. These authorities are coordinated with and enhanced by limits established by the insurer's domiciliary state.

Hedging strategies currently employed by insurers range from straightforward relationships between the hedged asset and the derivative instrument (the hedge) to more complex relationships. The purpose of this section of the RBC calculation is to measure and reflect in RBC the risk reduction achieved by an insurer's use of the most straightforward types of hedges involving credit default and equity C-1 risks.

To avoid the possible double counting of RBC credits, excluded from this section are any RBC credits arising from hedges that are part of the Clearly Defined Hedging Strategy (CDHS) required for C-3 cash flow testing or other risk mitigation techniques (e.g. reinsurance) which produce reduced levels of RBC by operation of other parts of the RBC formula.

#### *RBC and Measuring the Risk Reduced by Hedging*

To measure the risks reduced by hedging and reflect the effects in RBC it is important to understand the characteristics and purpose of the hedge. A portfolio manager seeking to hedge a particular asset or portfolio risk must determine if the derivative instruments available will do a suitable job of risk mitigation.

Default risk - A portfolio manager may determine that the default risk of a particular debt security which matures in 8 years needs to be hedged because of a near term credit concern which may resolve before the debt matures. A credit default swap (CDS) would be the most effective hedging instrument. In some circumstances the manager may purchase a CDS with 8 years to maturity which fully mitigates the default risk and shall result in an RBC credit which fully offsets the C-1 default risk charge on the debt security. However, seeking the most liquid and cost efficient market for the purchase of such an instrument may lead to the purchase of a 5 year CDS which the manager plans to renew (roll) as the credit circumstances evolve in the coming years. In this case there is a 3 year maturity mismatch between the debt security and the hedging instrument. To account for the difference between insurers that have hedged the debt security to full maturity versus those with a mismatched position, a reduction of the full RBC credit shall be made in accordance with the following table. [\[Drafting note: Industry and NAIC personnel are finalizing a more granular credit reduction table.\]](#)

-	1 through 5-year maturity mismatch	6 through 10-year maturity mismatch	Greater than 11 year Maturity Mismatch
NAIC 1	2.00%	5.00%	7.00%
NAIC 2	5.00%	7.00%	10.00%
NAIC 3	10.00%	15.00%	25.00%
NAIC 4 or lower	15.00%	25.00%	35.00%

<u>Years of mismatch</u>	<u>RBC Credit</u>
<u>0</u>	<u>100%</u>
<u>1</u>	<u>100%</u>
<u>2</u>	<u>91%</u>
<u>3</u>	<u>87%</u>
<u>4</u>	<u>83%</u>
<u>5</u>	<u>80%</u>
<u>6</u>	<u>78%</u>
<u>7</u>	<u>76%</u>
<u>8</u>	<u>75%</u>
<u>9</u>	<u>73%</u>
<u>10</u>	<u>72%</u>
<u>11</u>	<u>72%</u>
<u>12</u>	<u>71%</u>
<u>13</u>	<u>71%</u>
<u>14</u>	<u>71%</u>
<u>15</u>	<u>71%</u>
<u>16</u>	<u>70%</u>
<u>17</u>	<u>70%</u>
<u>18</u>	<u>70%</u>
<u>19</u>	<u>69%</u>
<u>20</u>	<u>69%</u>
<u>21</u>	<u>69%</u>
<u>22</u>	<u>68%</u>

<u>23</u>	<u>68%</u>
<u>24</u>	<u>68%</u>
<u>25</u>	<u>67%</u>
<u>26</u>	<u>67%</u>
<u>27</u>	<u>67%</u>
<u>28</u>	<u>67%</u>
<u>29</u>	<u>66%</u>
<u>30</u>	<u>66%</u>
<u>30+</u>	<u>66%</u>

There may also be circumstances where default risk is reduced by hedging specific portfolios using a basket or index based derivative (e.g. CDX family of derivatives) with the same or very similar components as the portfolio. ~~For these hedges the risk reduction shall be measured based on the number of issuers common to the both the insurer's portfolio and the index/basket CDS. A minimum of 50% common holdings shall be required to qualify for any RBC credit. For year-end 2010 RBC, only a one-to-one hedging relationship shall be used for RBC credit. An RBC credit is not currently allowed for hedging with a basket or index based derivative.~~

As RBC is currently measured and reported annually and to an extent provides a regulator with an indicator of capital sufficiency for the near term future; default risk protection as provided by CDS (based on a specific security ~~or an index of securities~~) shall have more than 1 year remaining to maturity in order to receive any RBC credit, provided that the remaining maturity of the hedged debt security ~~or average maturity of the hedged portfolio~~ is greater than 1 year. When both the default risk protection and the hedged debt security have less than one year to maturity, full RBC credit shall be allowed provided that the maturity of the protection is later than the maturity of the debt security; otherwise no RBC credit is allowed.

Equity market risk - A portfolio manager may determine that the market risk of holding a particular common stock needs to be reduced. Because an outright sale at that point in time might be disadvantageous to the insurer and/or policy owners, a short futures contract may be purchased to eliminate the current market risk by establishing a sale price in the future. The C-1 RBC equity risk charge shall be fully credited provided that the future sale price stipulated in the hedge is equal to or greater than the current market price (a.k.a. "in the money").

There may also be circumstances where equity market risk is reduced by hedging equity portfolios using derivatives based on equity market indices (e.g. S&P 500 futures contracts). ~~Unless the equity portfolio is exactly matched to the index, the hedge will not provide precise one to one protection from fluctuations in value. In all cases the reduction of risk and the corresponding RBC credit shall be determined by the effectiveness of the hedge as measured by the value correlation between the hedged portfolio and the market index upon which the hedge is based supported by a minimum of 30 data points from the most recent 12 month period. For year-end 2010 RBC, only a one-to-one hedging relationship shall be used for RBC credit. An RBC credit is not currently allowed for hedging equity portfolios.~~

(Numeric references represent spreadsheet columns)

## Bonds

- (1) Description - Reported on Schedule DB.
- (2) Notional Amount - Amount reported on Schedule DB.
- (3) Relationship Type of the Hedging Instrument and Hedged Asset. There are two categories; one- to- one relationships or one- to- many relationships. One- to- one relationship = Single issuer credit default swap on a single issuer name to hedge the credit risk of a specific hedged asset. One- to -many relationship = A portfolio of insurer assets paired with a basket or index based hedging instrument with the same or very similar components as the portfolio. For year-end 2010 RBC, only the one-to-one relationship shall be used.
- (4) Economic Hedge Effectiveness at Year-end - Economic effectiveness found in Schedule DB Column 23.
- (5) Maturity Date - Date reported on Schedule DB.
- (6) Years of Maturity Mismatch between Hedging Instruments and Hedged Asset - Necessary to determine the Credit Hedging Instrument Maturity Mismatch Factor. Calculation: Columns (15) Maturity Date of the Bond minus (5) Maturity Date of the Hedging Instrument divided by 365 days.
- (7) Credit Hedging instrument Maturity Mismatch Factor - Based on Hedged Assets NAIC Designation and the Years to Maturity Mismatch. See the table below. [\[Drafting note: Industry and NAIC personnel are finalizing a more granular credit reduction table.\]](#)

<u>Years of mismatch</u>	<u>RBC Credit</u>
<u>0</u>	<u>100%</u>
<u>1</u>	<u>100%</u>
<u>2</u>	<u>91%</u>
<u>3</u>	<u>87%</u>
<u>4</u>	<u>83%</u>
<u>5</u>	<u>80%</u>
<u>6</u>	<u>78%</u>
<u>7</u>	<u>76%</u>
<u>8</u>	<u>75%</u>
<u>9</u>	<u>73%</u>
<u>10</u>	<u>72%</u>
<u>11</u>	<u>72%</u>
<u>12</u>	<u>71%</u>
<u>13</u>	<u>71%</u>
<u>14</u>	<u>71%</u>
<u>15</u>	<u>71%</u>
<u>16</u>	<u>70%</u>

<u>17</u>	<u>70%</u>
<u>18</u>	<u>70%</u>
<u>19</u>	<u>69%</u>
<u>20</u>	<u>69%</u>
<u>21</u>	<u>69%</u>
<u>22</u>	<u>68%</u>
<u>23</u>	<u>68%</u>
<u>24</u>	<u>68%</u>
<u>25</u>	<u>67%</u>
<u>26</u>	<u>67%</u>
<u>27</u>	<u>67%</u>
<u>28</u>	<u>67%</u>
<u>29</u>	<u>66%</u>
<u>30</u>	<u>66%</u>
<u>30+</u>	<u>66%</u>

-	1 through 5-year maturity mismatch	6 through 10-year maturity mismatch	Greater than 11-year Maturity Mismatch
NAIC 1	2.00%	5.00%	7.00%
NAIC 2	5.00%	7.00%	10.00%
NAIC 3	10.00%	15.00%	25.00%
NAIC 4 or lower	15.00%	25.00%	35.00%

(8) Hedging Instruments Adjustment - Notional amount representative of the risk reduced. Calculation: Columns (2) Notional Amount multiplied by (4) Economic Hedge Effectiveness at Year-end multiplied by (7) Credit Hedging Instrument Maturity Mismatch Factor.

(9) Cash Instrument RBC Factor - Represents the RBC Factor based on NAIC Designation of the cash instrument (s). For a one- to- one hedging relationship between a Hedging Instrument and a Bond, this factor shall be the same as for Bonds found in Column (17) RBC Factor. ~~For a one- to- many relationship between a Hedging Instrument and many Bonds that have various NAIC Designations and the Bond Column (16) NAIC Designation is reported as such (e. g. Various), Cash Instrument RBC Factor shall be based on the impact of the Hedging Instrument to the hedged asset. Examples of the impact of the Hedging Instrument to the hedged asset are: 1) In a first to default basket swap, the lowest NAIC Designation in the basket of Bonds will be used as the Cash Instrument~~

~~RBC Factor; 2) In a second to default basket swap, the second lowest NAIC Designation in the basket of Bonds will be used as the Cash Instrument RBC Factor; and 3) if a Hedging Instrument is hedging a portfolio of Bonds, the company shall use the same factor as found in Column 17) RBC Factor which uses a dollar weighted average NAIC charge based on book/adjust carrying value.~~

- (10) Description - Bond description found in Schedule D.
- (11) CUSIP Identification - Bond unique identifier found in Schedule D.
- (12) Par Value - Value found on Schedule D.
- (13) Book Adjusted Carrying Value - Value found on Schedule D.
- (14) Book Adjusted Carrying Value Factor - To ensure that the RBC Credit for Hedging Instruments (19) does not exceed the gross Bond C-1 RBC Charge, this Factor shall not be greater than 1. If the Bond was purchased at a premium, the factor will be 1. If the Bond was purchased at a discount, the factor will be less than 1. Calculation: Columns (13) Book Adjusted Carrying Value / (12) Par Value.
- (15) Maturity Date - The date is found in Schedule D. If the relationship between the bond and the hedge is one- to- one, then the maturity date should be exactly as stated in Schedule D. ~~In the case of one to many relationships, the maturity date shall reflect the dollar weighted average time to maturity of the hedged assets.~~
- (16) NAIC Designation - Designation found in Schedule D. Necessary to determine correct RBC Factor for the Bonds.
- (17) RBC Factor - Factor based on Column (16) NAIC Designation and NAIC RBC factors table. ~~If the Column (16) NAIC Designation is "Various", the insurer shall calculate and insert a dollar weighted average NAIC C-1 RBC charge based on book/adjust carrying value.~~
- (18) Gross RBC Charge – This is the C-1 RBC charge based on holdings at the end of the year. Calculation: Columns (13) Book Adjusted Carrying Value multiplied by (17) RBC Factor.
- (19) RBC Credit for Hedging Instruments - Columns (8) Hedging Instruments Adjustment multiplied by (14) Book Adjusted Carrying Value Factor multiplied by (9) Cash Instrument RBC Factor.
- (20) Net RBC Charge – C-1 RBC charge less Hedging Instrument RBC credit. Calculation: Columns (18) Gross RBC Charge minus (19) RBC Credit for Hedging Instruments.

#### Common Stocks

- (1) Description - Reported on Schedule DB.
- (2) Notional Amount - Amount reported on Schedule DB.
- (3) Relationship Type of the Hedging Instrument and Hedged Asset. There are two categories; one –to- one relationships or one- to- many relationships. One- to- one relationship = Single name equity derivative paired with a specific common stock. One- to- many relationship = A portfolio of common stocks paired with a basket or index

based Hedging Instrument with the same or very similar components as the portfolio. For year-end 2010 RBC, only the one-to-one relationship shall be used.

(4) Economic Hedge Effectiveness at Year-end - Economic effectiveness found in Schedule DB Column 23.

(5) Hedging Instruments Adjustment – derivative Notional amount representative of the risk reduced.  
Calculation: Columns (2) Notional Amount multiplied by (4) Economic Hedge Effectiveness at Year-end.

(6) Description - Common Stock description found in Schedule D Part 2 Section 2.

(7) CUSIP Identification - Common Stock unique identifier found in Schedule D Part 2 Section 2.

(8) Number of Shares - Amount found on Schedule D Part 2 Section 2.

(9) Book Adjusted Carrying Value - Value found on Schedule D Part 2 Section 2.

(10) Rate per share used to obtain Fair Value - found in Schedule D Part 2 Section 2.

(11) Correlation Factor - ~~There are situations where the cash market asset and the hedging instrument may not match perfectly. Equity portfolios may be hedged using market indices like the S&P 500. Unless the equity portfolio is perfectly matched to the index, the hedge will not provide precise one-to-one risk reduction as to fluctuations in value. In all cases RBC credit shall be determined by the effectiveness of the hedge as measured by the value correlation between the hedged portfolio and the market index upon which the hedge is based supported by a minimum of 30 data points evenly distributed throughout the time during the annual statutory reporting period when the hedge was in effect.~~ Economic effectiveness found in Schedule DB column 23.

(12) RBC Factor - Factor based on NAIC C-1 RBC factors table.

(13) Gross RBC Charge - The C-1 RBC charge based on holdings at the end of the year. Calculation: Columns (9) Book Adjusted Carrying Value multiplied by (12) RBC Factor.

(14) RBC Credit for Hedging Instruments - RBC credit for equity market risk reduction. Calculation: Columns (5) Hedging Instruments Adjustment multiplied by (12) RBC Factor.

(15) Net RBC Charge - Common Stock RBC charge less Hedging Instrument RBC credit. Calculation: Columns (13) Gross RBC Charge minus (14) RBC Credit for Hedging Instruments.

Company Name

**HEDGING**

- Columns are derived from Investment schedules.
- Column is a calculation
- Column is based on a table

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Type of Hedged Asset	Hedging Instruments										
Description	Notional Amount	Relationship Type	Economic Hedge Effectiveness at Year-end	Maturity Date	Years of Maturity Mismatch between Hedging Instrument and Hedged Assets	Credit Hedging Instrument Maturity Mismatch Factor	Hedging Instruments Adjustment	Cash Instrument RBC Factor			
<b>Bonds</b>											
Example #1	(0000001)	<b>B</b>	Credit Default Swap - Rec 0.0000 [PAY 0.2400]	100,000,000	one to one	100%	12/01/12	1.83	2%	\$98,000,000	0.004
Example #2		<b>B</b>	Credit Default Swap - Rec 0.0000 [PAY 0.2300]	60,000,000	one to one	100%	12/01/12	1.83	2%	\$58,800,000	0.004
	(0199999)		Total	160,000,000						\$156,800,000	

**B** Maturity of the CDS was changed from the May 1 whitepaper to illustrate the maturity mismatch effect.

Cocode: 00000

(10) (11) (12) (13) (14) (15) (16) (17) (18) (19) (20)

**Hedged Asset - Bonds**

**RBC Credit**

	Description	CUSIP Identification	Par Value	Book Adjusted Carrying Value	Book Adjusted Carrying Value Factor	Maturity Date	NAIC Designation	RBC Factor	Gross RBC Charge	RBC Credit for Hedging Instruments	Net RBC Charge
Example #1	Boeing 10 year senior unsecured	125999AB1	\$100,000,000	\$99,850,000	0.998500	10/01/14	1FE	0.004	\$399,400	\$391,412	\$7,988
Example #2	Boeing 10 year senior unsecured	126999AB2	\$100,000,000	\$99,850,000	0.998500	10/01/14	1FE	0.004	\$399,400	\$234,847	\$164,553
	xxxxx	Total	\$200,000,000	\$199,700,000				xxxxx	\$798,800	\$626,259	\$172,541

Company Name

**HEDGING**

Columns are derived from Investment schedules.

Column is a calculation

Column is based on a table

(1) (2) (3) (4) (5) (6)

**Hedging Instruments**

		Description	Notional Amount	Relationship Type	Economic Hedge Effectiveness at Year-end	Hedging Instruments Adjustment	Description
<b>Common Stock</b>							
Example #3	(000001)	Short Exxon Mobil Futures	15,000,000	one to one	100%	\$15,000,000	Exxon Mobil Common Shares
	(039999)	Total	15,000,000			\$15,000,000	xxxxx

Cocode: 00000

(7) (8) (9) (10) (11) (12) (13) (14) (15)

**Hedged Asset - Common Stock**

**RBC Credit**

Example #3

CUSIP Identification	Number of Shares	Book Adjusted Carrying Value	Rate per share used to obtain Fair Value	Correlation Factor	RBC Factor	Gross RBC Charge	RBC Credit for Hedging Instruments	Net RBC Charge
125999236	1,000,000	\$30,000,000	30.00	1	0.300	\$9,000,000	\$4,500,000	\$4,500,000
<b>Total</b>		\$30,000,000				\$9,000,000	\$4,500,000	\$4,500,000

**BONDS**

SVO Bond Rating Category	Annual Statement Source	(1) Book / Adjusted Carrying Value	Factor	(2) RBC Requirement
<u>Long Term Bonds</u>				
(1) Exempt Obligations	AVR Default Component Column 1 Line 1	\$0	X 0.000 =	\$0
(2) Asset Class 1	AVR Default Component Column 1 Line 2	\$0	X 0.004 =	\$0
(3) Asset Class 2	AVR Default Component Column 1 Line 3	\$0	X 0.013 =	\$0
(4) Asset Class 3	AVR Default Component Column 1 Line 4	\$0	X 0.046 =	\$0
(5) Asset Class 4	AVR Default Component Column 1 Line 5	\$0	X 0.100 =	\$0
(6) Asset Class 5	AVR Default Component Column 1 Line 6	\$0	X 0.230 =	\$0
(7) Asset Class 6	AVR Default Component Column 1 Line 7	\$0	X 0.300 =	\$0
(8) Total Long-Term Bonds	Sum of Lines (1) through (7)	\$0		\$0
(Column (1) should equal Page 2 Column 3 Line 1)				
<u>Short Term Bonds</u>				
(9) Exempt Obligations	AVR Default Component Column 1 Line 18	\$0	X 0.000 =	\$0
(10) Asset Class 1	AVR Default Component Column 1 Line 19	\$0	X 0.004 =	\$0
(11) Asset Class 2	AVR Default Component Column 1 Line 20	\$0	X 0.013 =	\$0
(12) Asset Class 3	AVR Default Component Column 1 Line 21	\$0	X 0.046 =	\$0
(13) Asset Class 4	AVR Default Component Column 1 Line 22	\$0	X 0.100 =	\$0
(14) Asset Class 5	AVR Default Component Column 1 Line 23	\$0	X 0.230 =	\$0
(15) Asset Class 6	AVR Default Component Column 1 Line 24	\$0	X 0.300 =	\$0
(16) Total Short-Term Bonds	Sum of Lines (9) through (15)	\$0		\$0
(Column (1) should equal Schedule DA Part 1 Column 7 Lines 6099999+7999999+8099999 + LR012 Miscellaneous Assets Column (1) Line (2.2) )				
(17) Total Long-Term and Short-Term Bonds (pre-MODCO/Funds Withheld)	Line (8) + (16)	\$0		\$0
<b>(18) Reduction in RBC for Credit for Hedging</b>	<b>RBC - Hedging Risk Linear Bonds Schedule Column 19 Line 0199999</b>			<b>\$0</b>
<b>(19) Reduction in RBC for MODCO/Funds Withheld Reinsurance Ceded Agreements</b>	LR040 Modco or Funds Withheld Reinsurance Ceded - Bonds C-1o Column (4) Line (9999999)			\$0
<b>(20) Increase in RBC for MODCO/Funds Withheld Reinsurance Assumed Agreements</b>	LR041 Modco or Funds Withheld Reinsurance Assumed - Bonds C-1o Column (4) Line (9999999)			\$0
<b>(21) Total Long-Term and Short-Term Bonds</b> (including MODCO/Funds Withheld <b>and Credit for Hedging</b> adjustments.)	Lines (17) - (18) - (19) + (20)	\$0		<b>\$0</b>
<b>(22) Non-exempt Asset Class 1 U.S. Government Agency Bonds</b>	Schedule D Part 1 Class 1 Bonds and Schedule DA Part 1 Class 1 Bonds, in part†	\$0	X 0.004 =	\$0
<b>(23) Bonds Subject to Size Factor</b>	Line (21) - Line (1) - Line (9) - Line (22)	\$0		\$0
<b>(24) Number of Issuers</b>	Company Records	0		2.500
<b>(25) Size Factor for Bonds</b>				2.500
<b>(26) Bonds Subject to Size Factor after the Size Factor is Applied</b>	Line (23) x Line (25)			\$0
<b>(27) Total Bonds</b>	Line (22) + Line (26)			<b>\$0</b>

† Only investments in asset Class 1 U.S. Government agency bonds previously reported in Lines (2) and (10), net of those included on Line (19), plus the portion of Line (20) attributable to ceding companies' Lines (2) and (10) should be included on Line (22). No other class 1 bonds should be included on this line. Exempt U.S. Government bonds shown on Lines (1) and (9) should not be included on Line (22). Refer to the bond section of the risk-based capital instructions for more clarification.

**UNAFFILIATED PREFERRED AND COMMON STOCK**

		(1)	(2)	(3)	(4)	(5)
	Annual Statement Source	Book / Adjusted Carrying Value	Less Affiliated Preferred Stock Without AVR	RBC Subtotal	Factor	RBC Requirement
<u>Unaffiliated Preferred Stock</u>						
(1)	Preferred Stock (excluding Hybrids) Asset Class 1	AVR Default Component Column 1 Line 10, in part	\$0	\$0	X 0.004	\$0
(2)	Preferred Stock (excluding Hybrids) Asset Class 2	AVR Default Component Column 1 Line 11, in part	\$0	\$0	X 0.013	\$0
(3)	Preferred Stock (excluding Hybrids) Asset Class 3	AVR Default Component Column 1 Line 12, in part	\$0	\$0	X 0.046	\$0
(4)	Preferred Stock (excluding Hybrids) Asset Class 4	AVR Default Component Column 1 Line 13, in part	\$0	\$0	X 0.100	\$0
(5)	Preferred Stock (excluding Hybrids) Asset Class 5	AVR Default Component Column 1 Line 14, in part	\$0	\$0	X 0.230	\$0
(6)	Preferred Stock (excluding Hybrids) Asset Class 6	AVR Default Component Column 1 Line 15, in part	\$0	\$0	X 0.300	\$0
(7)	Hybrids Reported as Preferred Stock Asset Class 1	AVR Default Component Column 1 Line 10, in part	\$0	\$0	X 0.004	\$0
(8)	Hybrids Reported as Preferred Stock Asset Class 2	AVR Default Component Column 1 Line 11, in part	\$0	\$0	X 0.013	\$0
(9)	Hybrids Reported as Preferred Stock Asset Class 3	AVR Default Component Column 1 Line 12, in part	\$0	\$0	X 0.046	\$0
(10)	Hybrids Reported as Preferred Stock Asset Class 4	AVR Default Component Column 1 Line 13, in part	\$0	\$0	X 0.100	\$0
(11)	Hybrids Reported as Preferred Stock Asset Class 5	AVR Default Component Column 1 Line 14, in part	\$0	\$0	X 0.230	\$0
(12)	Hybrids Reported as Preferred Stock Asset Class 6	AVR Default Component Column 1 Line 15, in part	\$0	\$0	X 0.300	\$0
(13)	Total Unaffiliated Preferred Stock Including Hybrids (pre-MODCO/Funds Withheld)	Sum of Lines (1) through (12)	\$0	\$0		\$0
(Column (1) should equal Page 2 Column 3 Line 2.1 less Asset Valuation Reserve Default Component Column 1 Line 16.)						
(Column (2) should equal Schedule D Summary Column 1 Line 39 less Asset Valuation Reserve Default Component Column 1 Line 16.)						
(14)	Reduction in RBC for MODCO/Funds Withheld Reinsurance Ceded Agreements	Company Records (enter a pre-tax amount)				\$0
(15)	Increase in RBC for MODCO/Funds Withheld Reinsurance Assumed Agreements	Company Records (enter a pre-tax amount)				\$0
(16)	Total Unaffiliated Preferred Stock (including MODCO/Funds Withheld.)	Lines (13) - (14) + (15)				\$0
<u>Unaffiliated Common Stock</u>						
(17)	Total Common Stock	Schedule D Summary Column 1 Line 54	\$0			
(18)	Less Affiliated Common Stock	Schedule D Summary Column 1 Line 53	\$0			
(19)	Less Non-Admitted Unaffiliated Common Stock included in Line (17)	Company Records	\$0			
(20)	Less Money Market Mutual Funds	Schedule D Part 2 Section 2 Column 6 Line 7199999	\$0	\$0	X 0.004	\$0
(21)	Less Federal Home Loan Bank Common Stock	AVR Equity Component Column 1 Line 3	\$0	\$0	X 0.011	\$0
(22)	Less Unaffiliated Private Common Stock	AVR Equity Component Column 1 Line 2	\$0	\$0	X 0.300	\$0
(23)	Net Other Unaffiliated Public Common Stock	Lines (17) - (18) - (19) - (20) - (21) - (22)	\$0	\$0	X 0.450	\$0
(24)	Total Admitted Unaffiliated Common Stock (pre-MODCO/Funds Withheld)	Lines (20) + (21) + (22) + (23)	\$0	\$0		\$0
(Column 1 should equal Schedule D Summary by Country Column 1 Line 54 less Line 53 less Line (19))						
(25)	<b>Reduction in RBC for Credit for Hedging</b>	<b>RBC - Hedging Risk Linear Common Stock Schedule Column 14 Line 0199999</b>				\$0
(26)	Reduction in RBC for MODCO/Funds Withheld Reinsurance Ceded Agreements	Company Records (enter a pre-tax amount)				\$0
(27)	Increase in RBC for MODCO/Funds Withheld Reinsurance Assumed Agreements	Company Records (enter a pre-tax amount)				\$0
(28)	Total Admitted Unaffiliated Common Stock (including MODCO/Funds Withheld and Credit for Hedging.)	Lines (24) - (25) - (26) + (27)				\$0

## **Bonds LR002**

### Basis of Factors

The bond factors are based on cash flow modeling using historically adjusted default rates for each bond category. For each of 2,000 trials, annual economic conditions were generated for the 10-year modeling period. Each bond of a 400-bond portfolio was annually tested for default (based on a "roll of the dice") where the default probability varies by rating category and that year's economic environment. When a default takes place, the actual loss considers the expected principal loss by category, the time until the sale actually occurs and the assumed tax consequences.

Actual surplus needs are reduced by incorporating anticipated annual contributions to the asset valuation reserve (AVR) as offsetting cash flow. Required surplus for a given trial is calculated as the amount of initial surplus funds needed so that the accumulation with interest of this initial amount and subsequent cash flows will not become negative at any point throughout the modeling period. The factors chosen for the proposed formula produce a level of surplus at least as much as needed in 92 percent of the trials by category and a 96 percent level for the entire bond portfolio.

The factor for Class 6 bonds recognizes that the book/adjusted carrying value of these bonds reflects a loss of value upon default by being marked to market.

### Specific Instructions for Application of the Formula

#### Lines (1) through (7)

The book/adjusted carrying value of all bonds and related fixed-income investments should be reported in Column (1). The bonds are split into seven different risk classifications. For long-term bonds these classifications are found on Lines 1 through 7 of the Asset Valuation Reserve Default Component, Page 31 of the Annual Statement.

#### Line (8)

The total should equal long-term bonds and other fixed-income instruments reported on Page 2, Column 3, Line 1 of the Annual Statement.

#### Lines (9) through (15)

The book/adjusted carrying value of all bonds and related fixed-income investments should be reported in Column (1). The bonds are split into seven different risk classifications. For short-term bonds, these classifications are found on Lines 18 through 24 of the Asset Valuation Reserve Default Component, Page 31 of the Annual Statement.

#### Line (16)

The total should equal short-term bonds reported on Schedule DA, Part 1, Line 6099999, and money market mutual funds on Schedule DA, Part 1, Lines 7999999 and 8099999 plus LR012 Miscellaneous Assets Column (1) Line (2.2).

#### Line (18)

The total amount reported on the RBC - Hedging Risk Linear Bonds schedule Column (19) Line 0199999.

Line ~~(2122)~~

Class 1 bonds (highest quality) issued by a U. S. government agency that are not backed by the full faith and credit of the U. S. government should be reported on this line. The loan-backed securities of the Federal National Mortgage Association (FNMA) and the Federal Home Loan Mortgage Corporation (FHLMC) would be examples of the securities reported on this line. Line ~~(2122)~~ should not be larger than the sum of Lines (2) and (10). Exempt obligations should not be included on this line.

Line ~~(2324)~~

Bonds should be aggregated by issuer (the first six digits of the CUSIP number can be used). Exempt U. S. government bonds and bonds reported on Line ~~(2122)~~ are not counted in determining the size factor. The RBC for those bonds will not be included in the base to which the size factor is applied. If this field is left blank, the maximum size factor adjustment of 2.5 will be used.

Line ~~(2425)~~

The size factor reflects the higher risk of a bond portfolio that contains relatively fewer bonds. The overall factor decreases as the portfolio size increases. Portfolios with more than 1,300 issuers will receive a discount. The size factor is based on the weighted number of issuers. (The calculation shown below will not appear on the RBC filing software, but will be calculated automatically.)

		(a)	(b)
Line <del>(2425)</del>	Source	Number of Issuers	Weighted Issuers
First 50	Company Records	_____	X 2.5 = _____
Next 50	Company Records	_____	X 1.3 = _____
Next 300	Company Records	_____	X 1.0 = _____
Over 400	Company Records	_____	X 0.9 = _____
Total Number of Issuers from Line <del>(2324)</del>		_____	_____
Total Weighted Issuers			_____

## **Unaffiliated Preferred and Common Stock LR005**

### Basis of Factors

#### Unaffiliated Preferred Stock

Starting with year-end 2004 RBC, the preferred stock factors were changed to be the same as for bonds.

#### Unaffiliated Common Stock

Non-government money market mutual funds are more like cash than common stock; therefore it is appropriate to use the same factor as for cash. Federal Home Loan Bank Stock has characteristics more like a fixed-income instrument rather than common stock. A 1.1 percent pre-tax factor was chosen. The factor for other unaffiliated common stock is based on studies conducted at two large life insurance companies. Both of these studies focused on well diversified portfolios with characteristics similar to the Standard and Poor's 500 and indicate that a 30 percent pre-tax factor is needed to provide capital to cover approximately 95 percent of the greatest losses in common stock value over a two-year future period. This factor assumes capital losses are unrealized and not subject to favorable tax treatment at the time loss in fair value occurs.

Two adjustments are made to the 30 percent pre-tax factor to account for differences between the insurer's portfolio and the Standard and Poor's 500: first, the factor for publicly traded unaffiliated common stock is adjusted up or down by the weighted average beta of the insurer's portfolio subject to a maximum of 45 percent and a minimum of 22.5 percent; and, second, a common stock concentration component is calculated, adding an additional requirement equal to 50 percent of the beta adjusted basic requirement for the five largest holdings of common stock in the insurer's portfolio.

### Specific Instructions for Application of the Formula

#### Lines (1) through (12)

Column (1) amounts are from the Asset Valuation Reserve Default Component, Page 31, Column 1, Lines 10 through 15 of the Annual Statement. Since affiliated amounts are included for affiliated companies without an AVR in the Asset Valuation Reserve Default Component, Lines 10 through 15, these affiliated amounts should be deducted in Column (2). Affiliated companies with an AVR are reported on the Asset Valuation Reserve Default Component, Line 16 and should not be included in Column (2).

#### Line (13)

Column (1) should equal Annual Statement Assets, Page 2, Column 3, Line 2.1 less Asset Valuation Reserve Default Component Column 1 Line 16. Column (2) should equal Schedule D Summary by Country, Column 1, Line 39 less Asset Valuation Reserve Default Component, Column 1, Line 16.

#### Line (19)

Amount should reflect any non-admitted unaffiliated common stock that was included in the book/adjusted carrying of Schedule D Summary by Country, Line 54, Column 1 (Line (17) of this page).

Line (20)

Amounts should reflect only those money market mutual funds reported on Schedule D, Part 2, Section 2. Money market funds qualifying for Schedule DA treatment or reported on Schedule D, Part 1 should not be included on this line. Refer to the NAIC's Purposes and Procedures of the Securities Valuation Office for a discussion on those money market funds that qualify for Schedule DA treatment.

Line (21)

Federal Home Loan Bank common stock reported on Schedule D, Part 2, Section 2 of the Annual Statement should be reflected on this line.

Line (23)

The pre-tax factor for other unaffiliated common stock should be equal to 30 percent adjusted in the case of publicly traded stock by the weighted average beta for the insurer's portfolio of common stock, subject to a minimum factor of 22.5 percent and a maximum factor of 45 percent. The calculation of the beta adjustment should follow the procedures laid out for the similar adjustment in the asset valuation reserve calculation. Insurers that chose not to calculate a beta for their portfolio should use the maximum factor of 45 percent.

Line (24)

Column (1) should equal Annual Statement Schedule D Summary by Country, Column 1, Line 54 less Schedule D Summary by Country, Column 1, Line 53.

Line (25)

The total amount reported on the RBC - Hedging Risk Linear Common Stock schedule Column (14) Line 0199999.

Lines (~~25~~26) and (~~26~~27)

To the extent that a modco or funds withheld transaction is backed by common stock included in Line (24) of the ceding company's RBC calculation, the ceding company's credit and assuming reinsurer's charge should include a beta adjustment that is calculated in a manner consistent with the Line (24) calculation of the ceding insurer.