

Appendix A - Summary of Alternative Formulas Proposed

1 As proposed

$$\left[\frac{\text{Premiums allocated to date} + \text{Claims and benefits paid to date}}{\text{Total expected premiums} + \text{Total expected claims and benefits}} \right] * \text{CM at initial recognition} - \text{CM previously recognized} = \text{CM recognized in current period}$$

2 As proposed with weighting(relative)

$$\left[\frac{\text{Premiums allocated to date} * x + \text{Claims and benefits paid to date} * (1-x)}{\text{Total expected premiums} * x + \text{Total expected claims and benefits} * (1-x)} \right] * \text{CM at initial recognition} - \text{CM previously recognized} = \text{CM recognized in current period}$$

3 As proposed with weighting(risk-based)

$$\left[\frac{\text{Premiums allocated to date} + \text{Claims and benefits paid to date} * n}{\text{Total expected premiums} + \text{Total expected claims and benefits} * n} \right] * \text{CM at initial recognition} - \text{CM previously recognized} = \text{CM recognized in current period}$$

4 Claims

$$\left[\frac{\text{Incurred claims and benefits to date} * \text{CM at initial recognition}}{\text{Total expected claims and benefits over life of contract}} \right] - \text{CM previously recognized} = \text{CM recognized in current period}$$

5 Premiums Allocated

$$\left[\frac{\text{Premiums allocated to date}}{\text{Total premiums expected}} * \text{CM at initial recognition} \right] - \text{CM previously recognized} = \text{CM recognized in current period}$$

Appendix A - Summary of Composite Margin Recognition

Formula	Coverage Period	Claims Handling Period				Total Recognized
		Year 1	Year 2	Year 3	Year 4	
Formula 1 - As Proposed						
1A(expected claim changes)	\$ 10,243	\$ 1,886	\$ 2,016	\$ 1,185	\$ 754	\$ 16,084
1B(no expected claim changes)	\$ 9,271	\$ 1,005	\$ 1,675	\$ 1,675	\$ 2,457	\$ 16,084
Formula 2 - Relative Weighting						
2A(high coverage period release)	\$ 14,573	\$ 537	\$ 498	\$ 284	\$ 192	\$ 16,084
2B(high claims period release)	\$ 6,197	\$ 2,860	\$ 3,575	\$ 2,160	\$ 1,292	\$ 16,084
Formula 3 - Risk Weighting on Claims						
3A(low risk)	\$ 14,565	\$ 540	\$ 500	\$ 286	\$ 193	\$ 16,084
3B(high risk)	\$ 6,179	\$ 2,864	\$ 3,582	\$ 2,164	\$ 1,295	\$ 16,084
Formula 4 - Claims						
4	\$ 959	\$ 3,637	\$ 5,827	\$ 3,771	\$ 1,891	\$ 16,084
Formula 5 - Premiums						
5	\$ 16,084	\$ -	\$ -	\$ -	\$ -	\$ 16,084

Appendix A Formula 1 - As Proposed

Ratio =
$$\frac{\text{(Premiums allocated to date + Claims and benefits paid to date)}}{\text{(Total expected premiums + Total expected claims and benefits)}}$$

	Initial Recognition	Year 1	Year 2	Year 3	Year 4	Year 5
Premiums allocated to the current period		60,000	-	-	-	-
Premiums allocated to date		60,000	60,000	60,000	60,000	60,000
Total expected premiums	60,000	60,000	60,000	60,000	60,000	60,000
Current period claims payments		2,250	6,750	11,250	11,250	13,500
Claims paid to date		2,250	9,000	20,250	31,500	45,000

1A - With changes in expected claims						
Total expected claims	48,000	37,750	31,500	31,250	36,000	45,000
Ratio calculated for the period		0.6368	0.7541	0.8795	0.9531	1.0000
Composite margin recognized in earnings to date		10,243	12,129	14,145	15,330	16,084
Less: composite margin recognized in previous periods		-	10,243	12,129	14,145	15,330
Composite margin recognized in current period		10,243	1,886	2,016	1,185	754
Remaining composite margin	16,084	5,841	3,955	1,939	754	-

1B - No change in expected claims						
Total initially expected claims		48,000	48,000	48,000	48,000	48,000
Ratio calculated for the period		0.5764	0.6389	0.7431	0.8472	1.0000
Composite margin recognized in earnings to date		9,271	10,276	11,951	13,627	16,084
Less: composite margin recognized in previous periods		-	9,271	10,276	11,951	13,627
Composite margin recognized in current period		9,271	1,005	1,675	1,675	2,457
Remaining composite margin	-	10,077	6,759	2,458	1,106	-

Assumptions at initial recognition	
Coverage period	1 years
Claims handling period	5 years
Premiums	
Yearly	\$ 60,000
Total expected	\$ 60,000
Acquisition costs	
Incremental	\$ 2,000
Non-incremental	\$ 5,000
Discount rate	5%
Investment rate	8%
Composite margin	\$ 16,084

Appendix A Formula 2 - DP Proposed with weighting (similar to Formula 3)

Ratio =

Premiums allocated to date * x	+	Claims and benefits paid to date * (1-x)
Total expected premiums * x	+	Total expected claims and benefits * (1-x)

2A Margin recognized during coverage should be high

X	0.85
(1-x)	0.15

	Day 0	Year 1	Year 2	Year 3	Year 4	Year 5
Ratio calculated for the period		0.91	0.94	0.97	0.99	1.000
Composite Margin Balance	\$ 16,084					
Composite margin recognized to date		\$ 14,573	\$ 15,110	\$ 15,608	\$ 15,892	\$ 16,084
less composite margin recognized in prior periods		\$ -	\$ (14,573)	\$ (15,110)	\$ (15,608)	\$ (15,892)
Composite margin recognized in current period		\$ 14,573	\$ 537	\$ 498	\$ 284	\$ 192
Total CM recognized		\$ 14,573	\$ 15,110	\$ 15,608	\$ 15,892	\$ 16,084

2B Margin recognized during claims handling period should be high

X	0.25
(1-x)	0.75

	Day 0	Year 1	Year 2	Year 3	Year 4	Year 5
Cumulative CM recognized		0.39	0.56	0.79	0.92	1
Composite Margin Balance	\$ 16,084					
Composite margin recognized to date		\$ 6,197	\$ 9,057	\$ 12,632	\$ 14,792	\$ 16,084
less composite margin recognized in prior periods		\$ -	\$ (6,197)	\$ (9,057)	\$ (12,632)	\$ (14,792)
Composite margin recognized in current period		\$ 6,197	\$ 2,860	\$ 3,575	\$ 2,160	\$ 1,292
Total CM recognized		\$ 6,197	\$ 9,057	\$ 12,632	\$ 14,792	\$ 16,084

Appendix A Formula 3 - DP Proposed with weighting (risk-profile)

Ratio=	Premiums allocated to date	+	Claims and benefits paid to date * n
	Total expected premiums	+	Total expected claims and benefits * n

3A Short-tail risk profile contract

n 0.18

	Day 0	Year 1	Year 2	Year 3	Year 4	Year 5
Ratio calculated for the period		0.91	0.94	0.97	0.99	1.00
Composite Margin Balance	\$ 16,084					
Composite margin recognized to date		\$ 14,565	\$ 15,105	\$ 15,605	\$ 15,891	\$ 16,084
less composite margin recognized in prior periods		\$ -	\$ (14,565)	\$ (15,105)	\$ (15,605)	\$ (15,891)
Composite margin recognized in current period		\$ 14,565	\$ 540	\$ 500	\$ 286	\$ 193

3B Long-tail risk profile contract

n 3.02

	Day 0	Year 1	Year 2	Year 3	Year 4	Year 5
Ratio calculated for the period		0.38	0.56	0.78	0.92	1.00
Composite Margin Balance	\$ 16,084					
Composite margin recognized to date		\$ 6,179	\$ 9,043	\$ 12,625	\$ 14,789	\$ 16,084
less composite margin recognized in prior periods		\$ -	\$ (6,179)	\$ (9,043)	\$ (12,625)	\$ (14,789)
Composite margin recognized in current period		\$ 6,179	\$ 2,864	\$ 3,582	\$ 2,164	\$ 1,295

Appendix A Formula 4 - Claims

$$\text{Ratio} = \frac{\text{Incurred claims and benefits to date} * \text{CM at initial recognition}}{\text{Total expected claims and benefits over life of contract}}$$

	Day 1	Year 1	Year 2	Year 3	Year 4	Year 5
Paid to date		2,250	9,000	20,250	31,500	45,000
Total expected claims		37,750	31,500	31,250	36,000	45,000
Ratio for period		0.06	0.29	0.65	0.88	1.00
CM Recognized		959	3,637	5,827	3,771	1,891
Remaining composite margin	16,084	15,125	11,489	5,662	1,891	-

Appendix A Formula 5 - Allocated Premiums

$$\text{Ratio} = \frac{\text{Premiums allocated to date}}{\text{Total premiums expected}} * \text{CM at initial recognition}$$

	<u>Day 1</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
Premiums allocated to date		60,000	60,000	60,000	60,000	60,000
Total Premiums Expected		60,000	60,000	-	60,000	60,000
Ratio for period		1				
CM Recognized		16,084	-	-		
Remaining composite margin	16,084	-	-	-		