

Plenary 1: Impact of the new regulations on the UAE Insurance Market –Focus on Reserving

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Content

- Key areas of the new regulations – Recap
- The impact on the industry
- Key actuarial challenges
- Introduction to the Cap Cod reserving method

Key Areas of Regulation

- Basis of Investing the Rights of Policyholders
- Solvency Margin and Minimum Guaranteed Fund
- Basis of Calculating the Technical Provisions
- Determining the Company's Asset Valuation
- Organizing and Maintaining Records
- Accounting Books and Records
- Financial Reporting

Impact of the new regulations

- How is the market reacting thus far?
- Implementation – **the will and capacity to enforce?**
- Under Reserving – **A repeat of the KSA market?**
- Asset Allocation/Investment Strategy - **Market Impact**
- Insolvency - **Trigger for M&A activity, Liquidation ?**
- Local versus Foreign Companies - **Risk Management Practices & Good Governance?**
- Takaful Operators – **will they survive?**
- What about the pricing war?

Actuarial Challenges

- Quality of Reports
- Professional Integrity (responsible to various stakeholders)
- Actuarial Involvement on the asset side (is this our natural area of strength?) :
 - Mark to Market Basis
 - Mark to Model Basis
- Reserving

Reserving Requirements

- There shall be sufficient data available with the Company to facilitate the IBNR calculation. The Company's management shall be responsible to certify the completeness, appropriateness and accuracy of the insurance data to be used for the calculation of the IBNR.
- The Company will use actuarial methods that are applicable depending on size, scale and complexity of business. The Actuary shall provide adequate explanation to the methods adopted and the methods should be consistent from year to year. In case the Actuary decides to change the methods previously adopted and this methodology change has a material impact on results, sufficient explanation on the reason and impact needs to be provided to the Authority. The Authority reserves the right to ask or additional explanation and information for the change in methods adopted.

Report of the actuary on the estimation of reserves

- **Section One : The Company and its Business**

- **Section Two: The Data**

- **Section Three: The Methods**

1. Describe the methods used for estimation of provisions. If the methods used now are different from the methods used previously, state the reason(s) for change.
2. Document the assumptions underlying the methods and discuss to what extent the validity of the assumptions was verified.
3. Where the method(s) used is not commonly understood, explain the methodology and provide adequate working sheets to understand the calculations and results.
4. The review and the examination of the results should be executed using another method.

Report of the actuary on the estimation of reserves

- **Section Four: Evaluation of the results**
- **Section Five : Overall reserves**
- **Section Six : Attachments (All calculations)**
- **Section Seven : Certification**

Introduction to the Cape Cod Reserving Method



It's Like Bornhuetter-Ferguson

Indicated ultimate losses = (Losses-to-date) + $(1 - 1/\text{LDF}) \times$
(expected ultimate losses)

- B-F: ELR \times premium
- CC: algorithm using company's data

About the exposure base...

- Think of it as a “leading indicator”

Basic Example

	(1)	(2)	(3)	(4) = (2) × (3)
AY	Exposures	Reported Losses	Loss Trend to 2015	Trended Reported Losses
2011	7,000	4,100	1.311	5,375
2012	8,000	3,600	1.225	4,410
2013	9,000	4,400	1.145	5,038
2014	10,000	4,275	1.070	4,574
2015	11,000	2,375	1.000	2,375
Total	45,000	18,750		21,772

	(5)	(6)	(7)	(8)
AY	Percent Reported	(1) × (5) Reported Exposure	(1) - (6) Unreported Exposure	(4) ÷ (6) Trended Developed Loss Ratio
2011	85%	5,950	1,050	90.3%
2012	75%	6,000	2,000	73.5%
2013	60%	5,400	3,600	93.3%
2014	45%	4,500	5,500	101.6%
2015	25%	2,750	8,250	86.4%
Total		24,600	20,400	88.5%

Basic Example - Continued

"Two-way" weighting scheme

AY	Trended Developed Loss Ratio × Percent Reported × Exposures					Weighted Trended Reported Losses
	Trended Developed Loss Ratio	Percent Reported	Exposures			
2011	90.3%	85.0%	7,000	×	×	5,375
2012	73.5%	75.0%	8,000	×	×	4,410
2013	93.3%	60.0%	9,000	×	×	5,038
2014	101.6%	45.0%	10,000	×	×	4,574
2015	86.4%	25.0%	11,000	×	×	2,375
Total						21,772

Weighted Average Loss Ratio	21,772	÷	24,600	=	88.5%
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Basic Example – Final Step

	(9)	(10)	(11)	(12) (10) x (11)	(13) (2) + (12)
AY	Expected Ultimate Loss Ratio	Expected Loss Ratio Detrended at 7%	Unreported Exposure	Expected IBNR	Ultimate Losses
2011	88.5%	67.5%	1,050	709	4,309
2012	88.5%	72.2%	2,000	1,445	5,445
2013	88.5%	77.3%	3,600	2,782	7,582
2014	88.5%	82.7%	5,500	4,548	8,148
2015	88.5%	88.5%	8,250	7,300	10,100
Total			20,400	16,785	35,585

Column (12) completes B-F IBNR Calculation: Col (10) x Col (11)

Basic Example with Decay

Calculation of Expected Ultimate Loss Ratio for AY2014

AY	Trended Developed Loss Ratio	"Three-way" weighting scheme				Trended Decayed Reported Losses
		Percent Reported	Exposures	Decay = 0.75		
2011	90.3%	85.0%	7,000	0.422	2,268	
2012	73.5%	75.0%	8,000	0.563	2,481	
2013	93.3%	60.0%	9,000	0.750	3,779	
2014	101.6%	45.0%	10,000	1.000	4,574	
2015	86.4%	25.0%	11,000	0.750	1,781	
Total					14,882	
			16,498			
	Weighted Average Loss Ratio		14,882 ÷ 16,498	=	90.2%	

Basic Example with Decay – Final Step

	(9)	(10)	(11)	(12)	(13)
AY	Expected Ultimate Loss Ratio	Detrended Expected Loss Ratio	Unreported Exposure	Expected IBNR	Ultimate Losses
2011	87.3%	66.6%	1,050	700	4,800
2012	86.8%	70.8%	2,000	1,417	5,017
2013	88.8%	77.6%	3,600	2,792	7,192
2014	90.2%	84.3%	5,500	4,637	8,912
2015	89.9%	89.9%	8,250	7,414	9,789
Total			20,400	16,959	35,709

**What does the decay process
add to the calculation of
expected losses?**

Why do we like the Cape Cod Method?

- Statistical: minimize variance
- Makes “common actuarial sense”
- It’s programmed, not ad hoc
- Method is robust

Special Reserving Issues

- Speedup/slowdown, case reserve strengthening / weakening
- Mix of business changes
- Changes in limits, retentions
- Large losses

Special Reserving Issues

Cape Cod results are only as good as their inputs

**Development factors will always be
the key**

When should the Cape Cod Method be used and selected?

Issue: Residual Trend

	(1)	(2)	(3)	(4)
AY	Exposures	Reported Losses	Loss Trend to 2015	Trended Reported Losses
2011	7,000	3,269	1.311	4,285
2012	8,000	3,721	1.225	4,558
2013	9,000	3,772	1.145	4,319
2014	10,000	3,533	1.070	3,780
2015	11,000	2,420	1.000	2,420
Total	45,000	16,715		19,362

	(5)	(6)	(7)	(8)
AY	Percent Reported	Reported Exposure	Unreported Exposure	Trended Developed Loss Ratio
2011	85%	5,950	1,050	72.0%
2012	75%	6,000	2,000	76.0%
2013	60%	5,400	3,600	80.0%
2014	45%	4,500	5,500	84.0%
2015	25%	2,750	8,250	88.0%
Total		24,600	20,400	78.7%

Issue: Residual Trend - Continued

Calculation of Expected Ultimate Loss Ratio for AY 2014

AY	Trended Developed Loss Ratio		Percent Reported		Exposures		Decay	=	Trended Decayed Reported Losses
2011	72.0%	×	85.0%	×	7,000	×	0.422	=	1,807
2012	76.0%	×	75.0%	×	8,000	×	0.563	=	2,565
2013	80.0%	×	60.0%	×	9,000	×	0.750	=	3,240
2014	84.0%	×	45.0%	×	10,000	×	1.000	=	3,780
2015	88.0%	×	25.0%	×	11,000	×	0.750	=	1,815
Total									13,207
			13,207		16,498			=	80.1%

Robustness of Cape Cod Method

ALAE

- Exposure base = ultimate losses
- Relationship to losses
- ALAE development pattern
- ALAE to date

Robustness of Cape Cod Method

Excess layer losses

- Exposure base = projected retained losses
- Relationship of excess to retained layer
- Excess loss development pattern
- Excess losses to date

Thank you