

Measuring Reserve Uncertainty

James Toller
CIGI 16 May 2006

Overview

Measuring reserve uncertainty [and adding business value]:

- Views
- Objectives & deliverables
- What we have done

Views

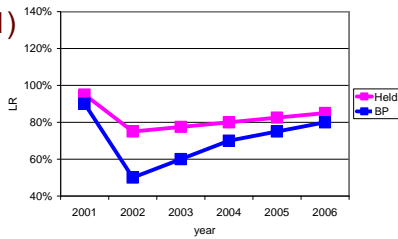
- We are often modelling the unknowable
- Excessive complexity may not add value
- Process can add value
- Best practice still evolving

Objectives & deliverables

Education						
Education	<table border="1"> <tr> <td> Reserving •Reserve margin •Reserve variability •Reserve check •Reserve strength </td> <td> Risk appetite •Min margin •Min reserve strength </td> </tr> <tr> <td> Capital modelling •Check capital models •Improve understanding </td> <td> Business planning •Risk margin release •'true profitability' •Ultimate recognition </td> </tr> </table>	Reserving •Reserve margin •Reserve variability •Reserve check •Reserve strength	Risk appetite •Min margin •Min reserve strength	Capital modelling •Check capital models •Improve understanding	Business planning •Risk margin release •'true profitability' •Ultimate recognition	Education
Reserving •Reserve margin •Reserve variability •Reserve check •Reserve strength	Risk appetite •Min margin •Min reserve strength					
Capital modelling •Check capital models •Improve understanding	Business planning •Risk margin release •'true profitability' •Ultimate recognition					
Education						

The Act of Penalties
 Making Your Business a Success

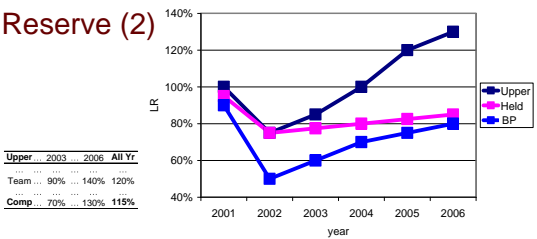
Reserve (1)



Margin	•Best estimate business plans •Explicit margins
--------	--

The Act of Penalties
 Making Your Business a Success

Reserve (2)



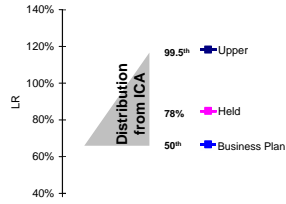
Upper ... 2003 ... 2006 All Yr	
Team ... 90% ... 140% 120%	
Comp ... 70% ... 130% 115%	

Variability	Produced and checked
'Upper'	•At granular level (team & year) & total •Simple but still lots of information

The Act of Penalties
 Making Your Business a Success

Reserve (3)

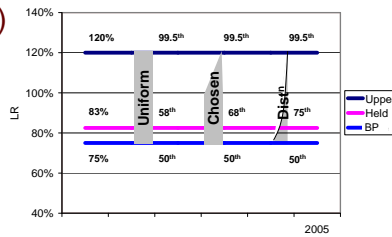
Perc	2003	2006	All Yr
Team	90%	60%	70%
Comp	95%	65%	75%



Strength	<ul style="list-style-type: none"> Implied held percentile shown Track strength over time
'Percentile'	

The Act of Parliament
Making Them of Sense of the Future

Reserve (4)



Distribution	<ul style="list-style-type: none"> Pure and Upper used to define distribution Explicitly review distributions (not just output)
--------------	---

The Act of Parliament
Making Them of Sense of the Future

Measuring reserve uncertainty

The upper is based on the ICA:

- Market cycle risk
- Claims volatility (freq / sev)
- Speed recognition
- Each level checked to the historical data

The Act of Parliament
Making Them of Sense of the Future

Risk appetite ⇄ Simple

↑
Complex

Should not be difficult – how big an impact has the Board appetite for?:

- Investors *really* don't like reserve increases
- Will constrain business decisions
- Arbitrary but necessary
- Simple appetites are easier

The Act of Penetration
Making Them Understand the Value

Business planning

Understand profitability with multi-year (cross cycle?) planning:

- Having separate business planning and reserve estimates improves risk / reward analysis
- Using best estimates improves cycle recognition
- Creating framework for release / strengthening of reserving risk margin is useful

The Act of Penetration
Making Them Understand the Value

ICA links

Understanding reserve uncertainty produces 'useful' ICA output:

- Improves ICA understanding and buy in
- Improves models

The Act of Penetration
Making Them Understand the Value

Key focus

- Focus model on key risk
- Keep output simple and consistent
- Buy-in takes lots of structured time

Questions?

The Art of Problem Solving
Making Math Moments that Matter
