



ASSOCIATION ACTUARIELLE INTERNATIONALE  
INTERNATIONAL ACTUARIAL ASSOCIATION

# 13<sup>th</sup> Global Conference of Actuaries 2011

## *Emerging Risks... Daring Solutions*



Institute of Actuaries of India

## Round Table: Reserving Practices Globally

Ronald T. Kozlowski

Director & Head of General Insurance Consulting, Asia Pacific

TOWERS WATSON 



February 20 – 22, 2011

# Scope

- Discuss methods commonly used in Asia Pacific GI markets, including similarities/differences observed when compared with globally used methods
  - What are standard practices for developing loss reserves in Asia?
  - How are reserve analyses segmented? (e.g., LOBs, on-shore, off-shore, net/gross)
  - What countries are using risk margins and how are these risk margins being calculated?
  - Is discounting a common practice in Asia?
  - Does the actuary opine on the unearned premium reserves?



# Reserving Methods used in Asia

- Mainly standard methods
  - Loss Development (LDM) – loss development factors based on historical development triangles
    - Used for more mature years, volatile for initial periods
  - Bornhuetter-Ferguson methods (BF) – requires loss development and initial expected loss ratios
    - Often used for less mature years
  - Expected Loss Ratio (ELR) – relies on selected target loss ratio regardless of loss experience
    - Used when patterns unknown or development quite irregular
- Some smaller countries still rely on simple ratios
  - IBNR as a % of calendar year paid losses or premiums



# Reserving Methods used in Asia

- Advanced methods used less frequently include
  - Projected case estimate
  - Frequency / severity
  - Payments per claim incurred /finalized /active (PPCI / PPCF / PPCA)
    - Used in Australia for bodily injury claims, accident compensation schemes
    - Similar to frequency severity but done by accident year and development period
  - Stochastic reserving
    - uses GLM to predict claims outcome using injury type, severity, litigation status information and use Monte Carlo simulation to predict outcome - very useful for estimating XoL recoveries
    - Used in Australia



# Reserve Segmentation

## ○ LOB

- Sometimes by coverage (e.g., motor - liability vs physical damage)
- Australia - For bodily injury classes, generally analyze by payment type, e.g. weekly, common law, redemption, legal, medical, investigation, death

## ○ Onshore vs offshore

- Sometimes offshore split by country
- Australia – accident compensation by state

## ○ Direct vs assumed

- Assumed sometimes split by treaty proportional, treaty non-proportional, and facultative



# Reserve Segmentation

## ○ Net vs Gross

- Sometimes both
- Net; gross using gross/net ratios on net IBNR
- Gross; net using net/gross ratios on gross IBNR
  - Net and/or gross basis
    - calculated independently or
    - net/gross or (gross/net) ratios applied to IBNR
- Should check reasonableness of ceded IBNR



# Miscellaneous Reserving Questions

## ○ Risk Margins

- Yes – Singapore, Malaysia, Australia, China (GAAP)
  - Bootstrapping, Mack
  - Australian studies – Deloitte, Tillinghast
- No – Japan
- Mix – Hong Kong

## ○ Discounting

- Yes – Singapore, Australia, China (GAAP),
  - Generally risk free, government bonds with similar duration
- No – Japan, Hong Kong, Malaysia



# Miscellaneous Reserving Questions

- Unearned Premium Reserves
  - Many countries require actuaries to opine
  - Differences in development of
    - Unearned Premium Reserve (UEPR)
    - Unexpired Risk Reserve (URR)
  - Differences include
    - Treatment of Deferred Acquisition Costs (DAC)
    - Risk margins
    - Individual or total reserve adequacy





# Comparisons with International Practices

- Most Asian companies stop short
- More compliance driven
- Less diagnostic analysis
- IELRs selected judgmentally
  - Little explicit tracking of rate changes, inflation, socio/economic, changes in mix of business
- Confidence level unknown
- Data often segmented too fine



# Reserving is under-appreciated!

- Foundation of Pricing
- Provides better understanding of key performance indicators
  - Calendar year vs Accident year/Policy year
- Diagnostics help explain impacts of operational changes and changes in mix of business
- Reserving is Economic Capital!

