SEAC – June 04

Triple X –Phase IV

The Continuing Saga

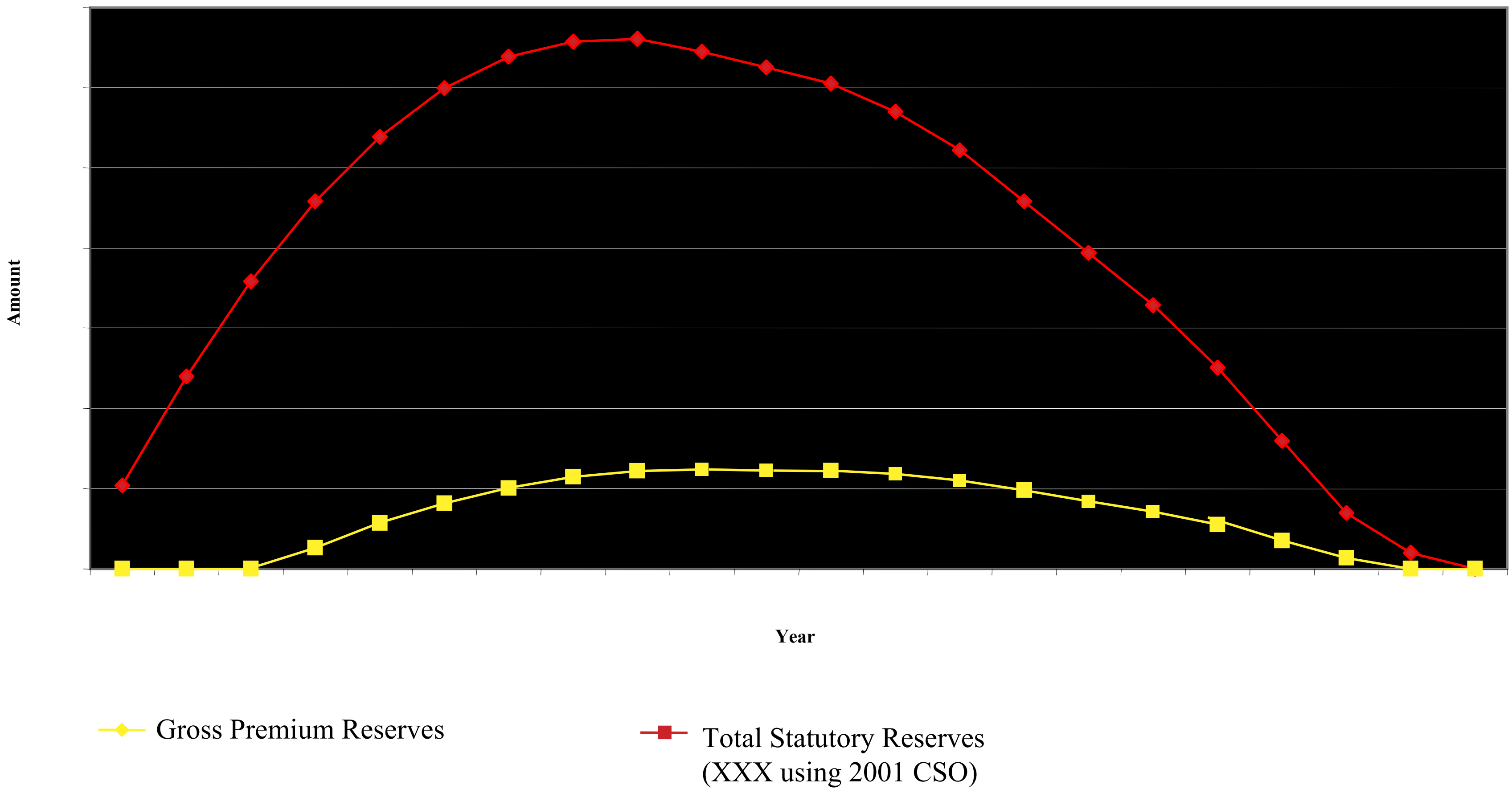
Developing a Solvency Reserve Basis from First Principles

- Assume
  - Discretionary not prescribed
  - Easy to apply formula
  - Never less than zero

Developing a Solvency Reserve Basis from First Principles

- Start with gross premium reserves on realistic assumptions
  - Include lapses and expenses
  - Floor for prudent solvency reserves
- Create formula reserve basis
  - Probably without lapses or explicit allowance for expenses
  - Ensure reasonable margin over gross premium reserves

Comparison of Reserves for block of level term business*



* 10, 15 and 20 year level term

Conclusion on XXX compared to First Principles

- Needs help or more work
- Doesn’t understand the meaning of reasonable margin
- Possibly creates technical insolvency even though all future obligations will be easily met

Redundancy in some XXX reserves becoming more generally accepted

- Not just major term writers
- Rating agencies
- Even some regulators

The Reality of XXX Reserves

- Companies forced to use reinsurance solutions
- Enormous potential strain on letter of credit costs
  - LoC demand for XXX reserve credit was $9bn in 2002; estimated at $45bn in 2007 and rising to $100bn
  - LoC costs could approach $1bn a year but affect of supply and demand are a big unknown
- LoC's are covering long term need with (hopefully) renewable short term solution

Triple X Phase IV Interested Parties Group

- **Objective to develop a proposal that:**
  - **Does not change XXX methodology**
  - **Results in reasonable reserves for all carriers including preferred risk carriers**
  - **Preserves 2001 CSO as safe harbor under IRCSection 7702 and 7702A**
  - **Preserves tax reserve status quo for companies that do not use preferred mortality**

Survey

- Created survey which was distributed to broad range of direct writers as well as reinsurers
- Survey sent to 83 companies with 40 responses (from 36 cos – some cos. had more than one response) made up of 35 non-reinsurers and 5 reinsurers

Survey Results

- **Of companies. materially affected by XXX (22 of 35)**
  - **85% agree reserves too high (5% disagree)**
  - **84% agree current reinsurance solution not satisfactory**
- **Of companies not materially affected by XXX (13 of 35)**
  - **50% agree reserves are too high (17% disagree)**
  - **54% agree current reinsurance solution not satisfactory**
- **In total about 10% of all respondents disagree that XXX reserves are too high**
  - **How did we ever get where we are today?**

Survey Results

- **Majority (i.e. 60%) thought that statutory reserves become burdensome when they exceed natural reserves by 20% and only 4 (of 35) thought threshold was greater than 35%**
- **All but one respondent thought valuation mortality is too high if it exceeds experience by more than 25% (the one was at 75%)**

Implications of Survey Results

- Determined that root cause of problem was valuation mortality assumptions and so proposal should focus on these
- Brainstormed alternatives
- Used a Quality Functional Deployment Chart to evaluate alternatives

Possible Solution

- Add to CRVM a variation of current X factor technique which can be applied to segmented reserves under Reg XXX (refer to as "Y-factors")
- This had the most advantages and least disadvantages compared to other solutions considered

Calculate XXX Segmented Basic Reserves Using Y Factor Mortality

- **Start with anticipated mortality experience without recognition of mortality improvement beyond valuation date**
- **Add margin by multiplying mortality by 1.15**

Determination of Y factors

- Apply similar constraints as for X factor's
  - Variability by class, form, etc.
  - Floor on percent
  - Non-decreasing
  - PV of death benefits not less than when using anticipated mortality
  - Mortality in first 5 years not less than anticipated
- Require similar analysis and certifications as for X factors

Possible Issues

- **Product limitations and election of use of Y-factors (e.g. on a policy form basis)**
  - ***Need to ensure solution does not create tax issues***
  - ***Valuation of Life Insurance Policies Model Reg (1999 NAIC) can be amended***
- **Proposal would detach the valuation basis from the non-forfeiture basis**
  - ***Should not be significant issue since CSV is still floor for reserves***

Possible Issues

- **Demonstrating the conservatism in the solution will be very important**
  - ***Can be addressed through margins***
  - ***Valuation Actuary testing***
- **The source of mortality assumptions may be an issue**
  - ***Can be covered by ASOP similar to ASOP 40***
- **Some may believe that adjustment of valuation mortality for non-preferred policies is needed**
  - ***Not sure why***

Solvency is not dependent on total industry reserves being at some fixed level

- If reserves can be responsibly reduced for a given block this has no impact on the adequacy (or inadequacy) of the reserves on the remaining business
- Either the reserves on the residual block are adequate or they are not.
- Nothing done to one block of business affects the view of another block (i.e. there is no dependence or interdependence)

Y factors can be constructed to produce suitable solvency reserves

- Under the proposal, Y factors would apply to all business on a policy form (not just preferred classes)
  - Y factors may vary by underwriting class and could be greater than 100%
  - Y factors must be justified and supportable and would require annual certification
- Pre-XXX reserves did not give rise to insolvencies

Solvency of Industry Is Not Affected by Selective Use of Y Factors

- Companies electing Y factors on some business
  - Overall reserve adequacy is supported by actuarial memorandum
  - Annual certification of Y factors implies this block not being subsidized
- Companies not electing Y factors on any business
  - No change in reserves, implying no change in solvency

Valuation Actuaries are Responsible for the Adequacy of Reserves

- Prescribed statutory reserves are starting point (for Valuation Actuary testing)
- The current “starting point” on some level term and long term g’tees is totally unreasonable
- Y factors would shift the “starting point” into realm of reasonableness

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