# Asset Adequacy Testing For LTC Products

Dennis O'Brien

New York Life Insurance Company

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# Methods of Asset Adequacy Testing

- Cash Flow Testing
- Gross Premium Valuation
- Other

# Actuarial Standards of Practice

- ASOP 7 - Analysis of Life, Health or Property/Casualty Insurer Cash Flows
- ASOP 18 - Long Term Care Insurance
- ASOP 22 - Statements of Opinion Based on Asset Adequacy Analysis by Actuaries for Life or Health Insurers

# ASOP 7 Reasons for Cash Flow Testing

- Where there are material asset risks (for example, below investment grade bonds, assets with payment timing risks such as CMOs or mortgage-backed securities, mortgages concentrated in certain regions of the country, and large illiquid assets such as real estate
- Where there are liabilities that have cash flows far our into the future

# ASOP 7 - Cash Flow Test is Not Always Necessary

- If, in the actuary's judgment, a block of business, taken together with its policy term and the associated investment strategy, is relatively insensitive to influences such as changes in economic conditions or interest-rate scenarios

# ASOP 18 - LTC Insurance Cash Flow Testing

- Because of the long-term nature of the LTC benefits, future liability cash flows may be different from future asset cash flows. Therefore, the actuary should consider cash flow testing as a potentially important part of any LTC insurance plan's financial analysis. This is especially true if LTC insurance is the sponsoring entity's only product or a major portion of the entity's business

# ASOP 22 - Analysis Methods

- A gross premium reserve test may be appropriate where the policy and other liability cash flows are sensitive to moderately adverse deviations in the actuarial assumptions underlying these cash flows.

# Considerations in Choosing a Testing Method for LTC

- Asset characteristics (callable bonds, CMOs, mortgage backed, illiquid assets)
- Asset liability mismatch
- Size of block
- Fraction of company business
- Liquidity

# Special Considerations for LTC

- Very steep slope
- Very low lapse
- Investment sensitivity (especially positive future cash flows)
- Lapse supported product
- Politically sensitive market
- Claim reserve tail

# Assumption Setting

- Morbidity
- Earned investment income rate
- Mortality
- Voluntary Lapse
- Expenses
- Rate Increases

# Assumption Setting - Morbidity

- Current best estimate
- Validate against company's experience
- Considerations regarding inflation protection
  - Relationship of interest rate and inflation
  - Cash vs. service reimbursement
- Inflation for existing claimants
- "Salvage"
- Considerations in morbidity improvement
- Sex distinct vs. unisex

# Assumptions Setting - Earned Rate

- Characteristics of assets backing LTC
  - Segregated assets?
  - Dedicated LTC investment strategy?
- Provision for defaults
- Provision for investment expenses
- Current and expected new money rates
  - Large future positive cash flows

# Assumption Setting - Mortality

- Best estimate
- Selection Factors
- Sex distinct vs. unisex
- Mortality improvement

# Assumption Setting - Voluntary Lapse

- Best estimate
- Validate against company experience
- Issue age/attained age considerations
- Group vs. individual
- Trend

# Assumption Setting - Expenses

- Best estimate validated against company experience
- New business vs. maintenance
- Provision for claims expense

# Assumption Setting - Rate Increases

- Increase status
    - In process of implementation
    - Submitted to states for approval
    - Next in regular round, documented as approved by management
    - Actuary trying not to set up more reserves?

# Assumption Setting - Rate Increase Shock Lapses

- Company history?
- Contingent Non-Forfeiture
  - Contractually?
  - As a negotiable item in rate increase?
- Offers if reduced coverage?
- Changing regulatory environment

# Sensitivity Tests for Moderate Adverse Outcomes

- Interest rate scenarios
- Morbidity
- Lapse/mortality
- Expenses
- Stochastic testing
- Role of rate increases in sensitivity testing
  - Is increase justifiable? (lifetime loss ratio)

# How to Mitigate Risks

- Interest rate hedging strategies
- Reinsurance
- New business pricing
  - If you're in a hole, stop digging

# Interest Rate Hedging Strategies

- Interest Rate Swaps
  - Cash exchanged based on notional amount and difference between fixed and floating rate of interest
- Example: five year forward, $100M notional, received fixed pay floating for 25 years (say fixed is 6%)

# Impact of Swap

- End of five years, immediate fixed 25 year rate drops to 4%
- Enter into immediate $100M notional 25 year swap, receive floating pay fixed
- Net - company receives (6% - 4%) x $100M or $2M annually
- Floating cancels out
- Usually settled in cash

# Reinsurance

- Quota share
- Excess loss
- Risk considerations
- Rate control

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# Other Considerations

- Implications for GAAP loss recognition
- Interim results
- Asset/liability matching

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# Questions???

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