The Reinsurance Section Presents

Life and Annuity Reinsurance Seminar
August 14-15, 2017 | The Westin New York at Times Square | New York, NY

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Life and Annuity
Reinsurance Seminar

OVERVIEW OF REINSURANCE AND MARKET
Jeff Katz, FSA, MAAA
August 14, 2017
Professional Development

• The SOA believes in good faith that the presentation being made today satisfies the definition of structured education under the Society of Actuaries’ CPD requirements and an organized activity under the American Academy of Actuaries’ US Qualification Standards.

• Each actuary must determine the number of credits that are applicable to them as job-relevant skills under the SOA’s CPD requirements or hours of relevant continuing education under the AAA’s US Qualification Standards.

• The material contained in this presentation has been prepared solely for informational purposes. This information is based on sources believed to be reliable, but we do not represent as to its accuracy or its completeness. The content of this presentation is intended to provide a general guide to the subject matter. Specialist advice should be sought about your specific circumstances.
Overview of LEARN

SOA Reinsurance Section Council
Education Initiative
Began in 2009
First presentation in 2010
Twenty – seven states, Bermuda and Trinidad sessions to date
Life Reinsurance Introduction
Types of Reinsurance

What is Reinsurance?

• Insurance purchased by an insurance company to cover all or part of certain risks on policies issued by that company

Definitions

• Ceding company: An insurer which underwrites and issues an original policy to an insured and transfers (cedes) a portion of the risk to a reinsurer
• Reinsurer: A company that contractually accepts a portion of the ceding company’s risk
• Reinsurance Intermediary: Agent or broker to ceding company that facilitates placing and binding of reinsurance with reinsurer.
• Retrocessionaire: A reinsurer’s reinsurer.
Types of Reinsurance

Typical Reinsurance Structure

- The ceding company sells a policy to an individual and transfers a portion of the risk to the reinsurer.
Life Reinsurance Initial Topics

Typical Reinsurance Structure with Retrocession

- **Individual** (purchases insurance policy)
  - Premium
  - Policy Benefits

- **Ceding Company** (sells policy to individual and cedes to reinsurer)
  - Premium
  - Policy Benefits

- **Reinsurer** (accepts risk from Ceding Company)
  - Premium
  - Policy Benefits

- **Retrocessionaire** (accepts risk from Reinsurer)
Types of Reinsurance

Why Reinsurance?

- **Mortality/Morbidity Risk Transfer**: Ceding Company only retains risk up to a certain limit (called retention limit) or as a percentage (called quota share)
- **Lapse or Surrender Risk Transfer**: Mainly used for products with large first year commissions
- **Investment Risk Transfer**: Utilize benefits of reinsurer’s investment facilities or to shift part of risk to reinsurer
- **New Business Financing**: Shift costs of acquiring business to reinsurer
- **Mergers and Acquisitions**: Increase capital through transferring risk of an inforce block
- **Underwriting Assistance**: Reinsurers can assist with complicated cases and provide facultative reinsurance
- **Entering New Markets**: Utilize reinsurer’s expertise
- **Divesting a Product Line**: Reinsure inforce business to exit certain businesses
Types of Reinsurance

Why Reinsurance? (continued)

- **Increase Profitability of Product**: Differences in cost structures between cedant and reinsurer could cause the product to be more profitable when reinsured
- **Financial Planning/Capital Management**: May need to increase capital levels through reinsurance
- **Reduce Volatility of Returns**: Reinsurance can reduce the cedant’s exposure to large claims
- **Tax Planning**: Done to maintain Life/non-Life status or utilize an expiring tax loss carry-forward
- **Enterprise Risk Management**: Reduce concentration of risk or utilize a reinsurer’s lower cost of capital

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US Life Reinsurance Market
US Ordinary Life NB Cession Rates (recurring business)

Source: Munich Re/SOA “2016 Life Reinsurance Survey Results”
Reinsurance Market: Cession Rate

Source: Munich Re/SOA “2016 Life Reinsurance Survey Results"
Reinsurance Market: Cession Rate

Source: Munich Re/SOA “2016 Life Reinsurance Survey Results”
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# US Life Reinsurers

## 2016 Recurring New Business

<table>
<thead>
<tr>
<th>Reinsurer</th>
<th>Premium Volume $M</th>
<th>Share</th>
<th>Change from 2015</th>
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<tr>
<td>SCOR Global Life</td>
<td>100,545</td>
<td>22.0%</td>
<td>3,574</td>
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<tr>
<td>Swiss Re</td>
<td>84,384</td>
<td>18.5%</td>
<td>4,106</td>
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<td>RGA Re*</td>
<td>84,052</td>
<td>18.4%</td>
<td>15,980</td>
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<td>Munich Re (US)</td>
<td>79,906</td>
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<td>6,725</td>
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<td>6,849</td>
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<td>-2,142</td>
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<td>-859</td>
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<td>1.9%</td>
<td>606</td>
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*RGA Re values represent combined reinsurance sales for RGA Re Company (United States) and RGA Re (Canada).

Source: Munich Re/SOA “2016 Life Reinsurance Survey Results”
# US Life Reinsurers

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Source: Munich Re/SOA “2016 Life Reinsurance Survey Results”
Types of Reinsurance
Types of Reinsurance

Coinsurance

- Reinsurance coverage ceded to the reinsurer on an individual policy is in the same form as that of the policy issued to the policyholder.
- “Same form” means that the ceding company and reinsurer are exposed to the same risks, they are essentially sharing the responsibility of insuring the policy, hence the name co-insurance.
- Since the cedant generally continues to maintain the policy administration, the reinsurer will allocate a portion of the premium to return to the cedant to cover a portion of these administration expenses.
- In addition to covering the administration expenses, the reinsurer will also return a portion of the premium to the cedant to cover agent commissions and underwriting expenses.
- The total returned premium is called an expense allowance.
- The absolute level of the expense allowance can vary from reinsurer to reinsurer.
- The larger the expense allowance, the more attractive the reinsurance quote.

Types of Reinsurance

Coinsurance

- Typical arrangements are for term life insurance where the cedant retains a percentage of each policy and sends the rest of the policy to several other reinsurers through the use of a “pool.”

Coinsurance Example
80/20 First Dollar Quota Share

Reinsurance Pool
(Contains the portion of each policy ceded, in this case, 80% of each policy)

Ceding Company
(Keeps 20% of each policy)

Reinsurer #1
(accepts risk from Ceding Company, 30% in this example)

30% Premiums
30% Death Benefits
Expense Allowance*

Reinsurer #2
(accepts risk from Ceding Company, 50% in this example)

50% Premiums
50% Death Benefits
Expense Allowance*

*The expense allowances will often vary by reinsurer.
Types of Reinsurance

Yearly renewable term (YRT)

- Reinsurance coverage for which the premium rates are not directly related to the premium rates of the original plan of insurance
- The premium rates are typically set as a percentage of an industry mortality table and are multiplied to the Net Amount at Risk (NAAR)
- NAAR is defined as the excess of the death benefit of a policy over the policy reserve
- Since a mortality rates generally increase each year, the premium rates per $1,000 will be increasing
- There is generally not an expense allowance
- The reinsurers reserves under a YRT arrangement are typically much smaller than those produced under a coinsurance arrangement (to be explained in the reserve section)
- YRT is generally thought of as “mortality only” reinsurance and is one of the cheapest forms of mortality risk transfer

Types of Reinsurance

YRT (continued)

- Can easily be utilized for any type of life contract
- Actual rates charged to the cedant are only guaranteed for one year, and the reinsurer has the right to increase rates
- Utilizes a reinsurance pool concept without an expense allowance
- One alternate version of YRT is called zero-first year premium (ZFY)
  - In ZFY reinsurance, no premium is paid to the reinsurer
  - This helps cedants recover a portion of first-year acquisition costs
Other Reinsurance Types

Modified Coinsurance (Modco) Arrangements

- Same as the coinsurance plan, except ceding company retains the assets with respect to all the policies reinsured.
- Establishes and retains the total reserves on the policies.
- The assuming company (reinsurer) is paid the gross investment income on the assets retained by the ceding company.
- Periodic settlements are made between the two companies for premiums collected and for death benefits, surrenders, dividends, etc., at the end of the year.
- Reinsurer is charged by the ceding company for its proportionate part of the increase in reserves on the reinsured policies.
- This modification removes one of the major disadvantages of strict coinsurance in that the original insurer’s assets are not diminished.
Other Reinsurance Types

Funds Withheld Arrangements

• A provision in a reinsurance treaty under which some or all of the premium due the reinsurer, usually an unauthorized reinsurer, is not paid but rather is withheld by the ceding company.
• Either to enable the ceding company to reduce the provision for unauthorized reinsurance in its statutory statement or to be on deposit in a loss escrow account for purposes of paying claims.
• The reinsurer's asset, in lieu of cash, is funds held by or deposited with reinsured companies.
Life Catastrophe Covers

Multi-Life Warrantees vs. Clash Covers

Multi-Life Warranty
• An excess of loss reinsurance agreement with cedant purchasing protection whereby one event results in multiple death claims (e.g., plane crash).

Clash Cover
• An excess of loss reinsurance agreement with cedant purchasing protection in case one death results in multiple death claims (e.g., reinsurer reinsures multiple ceding companies and the one individual is insured under multiple policies by multiple insurance companies).
Catastrophe Coverages

- Large Limit and Retention
- Type of “event” limited by hours clause
- Per Occurrence coverage rather than Per Risk
- The Reinstatement issue
Inforce Reinsurance

Inforce vs. New Business

Inforce Reinsurance
• Reinsurance agreement on a block of existing business where all policies were written and inforce previous to the effective date.

New Business Reinsurance
• Reinsurance agreement which may or may not have policies inforce at inception, but is open to covering new policies written after the effective date.
Inforce Reinsurance

Differences in Pricing and Treaty Documentation

Pricing
- Additional data will often be available for inforce blocks of business allowing for more precise pricing and modeling efforts.
  - Historical trends on the obligations including premium, claims and surrenders
  - Experience studies for mortality, morbidity, persistency, and production
  - Historical portfolio yields (earned and credited)
  - Term Conversion Experience
  - Statutory Income and Income by source

Treaty Documentation
- Potential for customization of treaty provisions based on whether or not the agreement is open to new business.
  - Incurred but Not Reported amounts
  - Effective dates of coverage for inforce and new business production
  - Caps on new business production - reserves or face amounts
  - Financial Triggers
Inforce Reinsurance

What are the Concerns of a Regulator?

Solvency
• Potential concerns that the cession of a large block could materially affect, either favorably or unfavorably, the capital position of either party.

“Fronting”
• To the extent that all of the business or all of a certain product line of a company is being ceded, certain jurisdictions impose limitations and or requirements around the reporting and nature of such transactions.

Bulk Reinsurance
• Inforce reinsurance is subject to additional insurance law in some jurisdictions which governs the approval process necessary to cede large books of business under certain conditions.
Reinsurance Regs and Resources
Major Regulations

- Credit for Reinsurance Model Law
- Credit for Reinsurance Model Regulation, with SSAP 61 for clarification
- Life and Health Reinsurance Agreements Model Regulation, with SSAP 62 & Appendix A-791
  - Probably the most relevant and clearest standards
  - Strangely, not applicable to YRT
- Reinsurance Intermediary Model Act
- Risk-Based Capital for Insurers Model Act
- Assumption Reinsurance Model Regulation
- Insurer Receivership Model Act (insolvency)

Consider
- Different variations by state
- Need to stay current
- May be advisable to discuss with state of domicile prior to entering into significant agreements
Reinsurance Links/Resources

  - iPad Application
Session Introduction

Who is this guy?

- Name
- Rank
- Credentials
- Experience
- LEARN
Don't Wait: ASK!
Risk Transfer
Risk Transfer

Identifying and Defining Risk Transfer

*Risk Transfer* is the equitable transfer of all significant risks and responsibility for payment of future benefits, from the cedant in exchange for reserve credit, to the reinsurer in exchange for compensation.

- Identifying what constitutes appropriate or sufficient risk transfer is a problem for both regulators and companies alike.
- Definition is often left to the discretion of the state regulator, resulting in disagreement and potential inconsistency.
- Some states have implemented specific regulations or legislation to address the issue, but it is difficult to define all situations in advance.
Risk Transfer

Life & Health Reinsurance Agreements Regulation

• Initially out of scope:
  
  A. Assumption reinsurance
  B. YRT reinsurance
  C. Certain non-proportional reinsurance, such as stop-loss or catastrophe
Example: indemnity reinsurance
Example: assumption reinsurance
Example: assumption reinsurance
Risk Transfer

Life & Health Reinsurance Agreements Regulation

• Initially out of scope:

  A. Assumption reinsurance
  B. YRT reinsurance
  C. Certain non-proportional reinsurance, such as stop-loss or catastrophe
Risk Transfer

Life & Health Reinsurance Agreements Regulation

• SSAP 61 and Appendix A-791 add YRT requirements

Will elaborate on each specific risk transfer requirement
Risk Transfer

Life & Health Reinsurance Agreements Regulation

• Initially out of scope:
  
  A. Assumption reinsurance
  B. YRT reinsurance
  C. Certain non-proportional reinsurance, such as stop-loss or catastrophe
Risk Transfer

Statutory Requirements

• In order for a ceding company to take statutory reserve credit, the reinsurance agreement must meet the following requirements:

1. Renewal expense allowances to the ceding company by the reinsurer must be sufficient to cover anticipated renewal expenses of the ceding company on the portion of the business reinsured. (In some jurisdictions, a liability may be established for the present value of the shortfall.)

Does not apply to YRT
Example: indemnity reinsurance
Risk Transfer

Example

1. Cedent estimates renewal expenses of 5% for renewal commissions, 2% for premium tax, and 3% for other expenses such as claims handling, administration, and financial reporting. Renewal allowances must be at 10% to meet risk transfer requirements. If they are less than 10%:

   A. If state permits shortfall reserve, can take reserve credit, but shortfall reserve effectively reduces reserve credit impact.

   B. If not, no reserve credit.
Types of Reinsurance

Coinsurance: Think "Partnership"

- Reinsurance coverage ceded to the reinsurer on an individual policy is in the same form as that of the policy issued to the policyholder.
- “Same form” means that the ceding company and reinsurer are exposed to the same risks, they are essentially sharing the responsibility of insuring the policy, hence the name co-insurance.
- Since the cedant generally continues to maintain the policy administration, the reinsurer will allocate a portion of the premium to return to the cedant to cover a portion of these administration expenses.
- In addition to covering the administration expenses, the reinsurer will also return a portion of the premium to the cedant to cover agent commissions and underwriting expenses.
- The total returned premium is called an expense allowance.
- The absolute level of the expense allowance can vary from reinsurer to reinsurer.
- The larger the expense allowance, the more attractive the reinsurance quote.

2. Reinsurer cannot deprive cedant of surplus or assets (for example, by termination of in force reinsurance) automatically upon the occurrence of some event (except for nonpayment of reinsurance premiums or other amounts due.) 

Applies to YRT
3. Reinsurer cannot require the ceding company to reimburse the reinsurer for negative experience under the agreement. Offsetting experience refunds against current and prior years’ losses or payment of an amount equal to the current and prior years’ losses upon voluntary termination by the ceding company shall not be considered such reimbursement.
Example: RBC Relief

- **Cedant**
  - Mortality risks
  - Premiums
  - Benefits
  - Experience refunds

- **Reinsurer** (authorized onshore)

**YRT – Funds withheld**
4. No termination or automatic recapture, in full or in part, can be scheduled in the treaty.
Risk Transfer

Statutory Requirements (cont.)

5. Reinsurance payments must only come from income realized by the reinsured policies. (Reinsurance premiums should not exceed direct premiums collected by the ceding company.)

Does not apply to YRT
Retail Premium vs YRT

For Permanent Life products, retail premium is level. YRT rates follow pattern of mortality/death benefits.
Risk Transfer

Statutory Requirements (cont.)

6. The treaty must transfer all the significant risks of the reinsured business. Such risks include: morbidity, mortality, lapse, credit quality, reinvestment, and disintermediation.

• See chart in regulation

Does not apply to YRT
Risk categories:

(a) Morbidity

(b) Mortality

(c) Lapse

This is the risk that a policy will voluntarily terminate prior to the recoupment of a statutory surplus strain experienced at issue of the policy.

(d) Credit Quality (C1)

This is the risk that invested assets supporting the reinsured business will decrease in value. The main hazards are that assets will default or that there will be a decrease in earning power. It excludes market value declines due to changes in interest rate.

(e) Reinvestment (C3)

This is the risk that interest rates will fall and funds reinvested (coupon payments or monies received upon asset maturity or call) will therefore earn less than expected. If asset durations are less than liability durations, the mismatch will increase.

(f) Disintermediation (C3)

This is the risk that interest rates rise and policy loans and surrenders increase or maturing contracts do not renew at anticipated rates of renewal. If asset durations are greater than the liability durations, the mismatch will increase. Policyholders will move their funds into new products offering higher rates. The company may have to sell assets at a loss to provide for these withdrawals.

+ - Significant  0 - Insignificant
<table>
<thead>
<tr>
<th>Risk Category</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
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<tbody>
<tr>
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*LTC = Long Term Care Insurance  
LTD = Long Term Disability Insurance
Statutory Requirements (cont.)

7. For business with significant asset risk, underlying assets must either be transferred to the reinsurer or legally segregated by the ceding company. (Some specified health and life business assets may be held by ceding company without segregation.)

Does not apply to YRT
Example: indemnnity reinsurance

Modified Coinsurance

Policyholder

Premiums
Benefits
Holder of assets backing reserves

Insurer A

Insurer B (Reinsurer)

Risks
Premiums
Benefits
Allowances
Reserve adjustments
Risk Transfer

Statutory Requirements (cont.)

8. Settlements made at least quarterly.

Applies to YRT
9. Ceding company must not be required to make representations or warranties that are not reasonably related to the business reinsured.

10. Ceding company must not be required to make representations or warranties about the future performance of the business reinsured.
Risk Transfer

Statutory Requirements (cont.)

11. The reinsurance agreement should not be entered into for the principal purpose of producing significant surplus aid, typically on a temporary basis, while not transferring all the significant risks inherent in the business reinsured (i.e. the expected liability to the ceding company remains unchanged.)

Applies to YRT
Risk Transfer

Statutory Requirements (cont.)

Requirement for written agreements

- Written documentation executed no later than as of date of financial statement
- Letter of intent replaced by treaty or amendment within 90 days
- Entire Agreement clause
- Changes by written and executed amendments
Credit for Reinsurance
Reserve Credit Security

What risk does reinsurance introduce?

- Recall that the purpose of reserves is to help the insurance company honor its commitments to the policyholder.
- When a reinsurance arrangement is entered, the insurance company transfers a portion of the risk to the reinsurer.
- Even though a portion of the risk is transferred, the insurance company is still liable to the policyholder.
- This is true even in the event of a reinsurer insolvency.
- Because the reserve provides additional protection to the policyholder, the insurance company needs to have certainty that it can access the assets backing the reserve in the event of a reinsurer insolvency.
Reserve Credit Security

What does Reserve Credit mean?

- When an insurance company sells a policy to a policyholder, it will need to hold a reserve to ensure payment of death benefits.
- When the insurance company cedes a portion of the risk through reinsurance, the insurance company will be able to reduce the amount of reserves it needs to hold, given that certain conditions are met by the reinsurer.
- Example: Assume that the insurance company enters into a 80/20 First Dollar Quota Share coinsurance arrangement.
  - If the reinsurer has met certain requirements, the insurance company can offset the liability it needs to hold to $200.
  - If the reinsurer has not met the requirements, the insurance company will not be able to reduce its required reserve and will hold $1,000.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Policy Reserve without Reinsurance</td>
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</tr>
<tr>
<td>Reinsurer's Reserve - 80% First-Dollar Quota Share Coinsurance</td>
<td>800</td>
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<tr>
<td>Ceding Company Reserve - with Reserve Credit</td>
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</tr>
<tr>
<td>Ceding Company Reserve - without Reserve Credit</td>
<td>1,000</td>
</tr>
</tbody>
</table>
Reserve Credit Security

NAIC Model Act on Credit for Reinsurance

- Establishes conditions that a reinsurer must meet in order for a domestic ceding company to take credit for reinsurance, either as an asset or as a reduction in liability for reinsurance ceded.
- Credit is allowed under the following conditions:
  - Reinsurer is licensed in the state
  - Reinsurer is accredited as a reinsurer in the state.
  - Reinsurer is domiciled and licensed in a state that has substantially similar standards as the Model Act
  - Reinsurer maintains a trust for the payment of claims
- If any of the above items are not met, credit can be taken if:
  - The insurance contract was written in a jurisdiction where such reinsurance is required by law
  - The reinsurer agrees to submit to a US court in the event that it fails to perform
  - The reinsurance contract utilizes a funds withheld arrangement
  - The reinsurer provides a clean, irrevocable, unconditional letter of credit by a qualified US institution
Reserve Credit Security

**Authorized/Unauthorized Reinsurer**

- **Authorized Reinsurer**
  - Either licensed or accredited in the ceding company’s state of domicile or a state with substantially similar laws as the ceding company’s state.
  - Licensing: Obtain a certificate of authority from the state that specifies the lines of business that the company is licensed to write.
  - Accreditation: (all 4 must be met)
    - Meets the financial conditions of the ceding company’s state of domicile
    - Is licensed in one state
    - Submits to that state’s jurisdiction
    - Senior management is of acceptable character

*John E. Tiller, Life, Health, and Annuity Reinsurance, Third Edition*
## Reserve Credit Security

<table>
<thead>
<tr>
<th>Authorized/Unauthorized Reinsurer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unauthorized Reinsurer</strong></td>
</tr>
<tr>
<td>• Neither licensed or accredited in the ceding company’s state of domicile</td>
</tr>
<tr>
<td>• State Regulatory Concerns</td>
</tr>
<tr>
<td>• No jurisdiction over unauthorized reinsurers</td>
</tr>
<tr>
<td>• Difficult to enforce contractual reinsurance benefits</td>
</tr>
<tr>
<td>• No control over the financial condition of unauthorized reinsurers</td>
</tr>
<tr>
<td>• Upon reinsurer insolvency, the ceding company’s financial position could be severely impaired</td>
</tr>
</tbody>
</table>

Reserve Credit Security

<table>
<thead>
<tr>
<th>Authorized/Unauthorized Reinsurer</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>Unauthorized Reinsurer</strong></td>
</tr>
<tr>
<td>• As stated in the Model Act, unauthorized reinsurers are required to provide security through:</td>
</tr>
<tr>
<td>• Assets in Trust or escrow accounts</td>
</tr>
<tr>
<td>• Letters of credit</td>
</tr>
<tr>
<td>• Funds withheld</td>
</tr>
<tr>
<td>• This additional security allows ceding companies to take credit for the reserves that the reinsurer is contributing</td>
</tr>
</tbody>
</table>

*John E. Tiller, Life, Health, and Annuity Reinsurance, Third Edition*
Reserve Credit Security

Reserve Credit Security Provided by Unauthorized Reinsurers

- **Assets in Trust and Escrow Accounts**
  - The beneficiary, normally the ceding company, must have a right to withdraw assets from the trust account at any time without notifying the reinsurer.
  - Assets deposited in the trust must be valued according to their current market value.
  - The assets must consist of only the following:
    - Cash
    - Certificates of Deposit
    - Investments as specified by the individual State’s Insurance Code
  - The reinsurance agreement may state that the trust assets could be withdrawn only for reimbursing the ceding company for amounts due from the reinsurer.

Reserve Credit Security

Reserve Credit Security Provided by Unauthorized Reinsurers

- **Letters of Credit**
  - A letter of credit (LOC) is a document issued by a qualified bank on the orders of one party which provides that the beneficiary will be able to withdraw funds up to a specified limit.
  - Rules covering the use of letters of credit in reinsurance vary from state to state.
  - Section 11 of the Credit for Reinsurance Model Regulation state that LOCs must be:
    - **Clean**: Beneficiary only needs to present a demand for payment
    - **Unconditional**: There can be no further qualifications outside of the letter of credit
    - **Irrevocable**: Can be modified only with consent of both parties
    - **Evergreen**: The LOC will renew automatically unless the issuing bank gives advance written notice of non-renewal

*John E. Tiller, Life, Health, and Annuity Reinsurance, Third Edition*
Reserve Credit Security

Reserve Credit Security Provided by Unauthorized Reinsurers

- **Funds Withheld Reinsurance**
  - This is a form of reinsurance where the assets are left on deposit with the ceding company.
  - These assets on deposit can originate from amounts due to the reinsurer or from a deposit from the reinsurer.
  - The amount of the deposit should be at least equal to the reserve credit to be taken.
  - This is an acceptable form of security since the ceding company has control of the assets.

*John E. Tiller, Life, Health, and Annuity Reinsurance, Third Edition*
Reserve Credit Security

New Category: Certified Reinsurers

- Historically, 100% collateral requirement imposed on unauthorized reinsurers
- Revised model act reduced requirement for certain reinsurers
- Must be in a qualified jurisdiction (e.g., Switzerland)
- Reduction in collateral based on financial strength rating

Reserve Credit Security

Proposed NAIC Model Regulation 786 Collateral Requirements

- The commissioner shall allow credit for reinsurance ceded by a domestic insurer to an assuming certified (re)insurer...
- The credit allowed shall be based on security held...in accordance with a rating assigned to the (re)insurer by the commissioner...

<table>
<thead>
<tr>
<th>Rating</th>
<th>Security Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secure – 1</td>
<td>0%</td>
</tr>
<tr>
<td>Secure – 2</td>
<td>10%</td>
</tr>
<tr>
<td>Secure – 3</td>
<td>20%</td>
</tr>
<tr>
<td>Secure – 4</td>
<td>50%</td>
</tr>
<tr>
<td>Secure – 5</td>
<td>75%</td>
</tr>
<tr>
<td>Vulnerable – 6</td>
<td>100%</td>
</tr>
</tbody>
</table>
Reserve Credit Security

Proposed NAIC Model Regulation 786 Collateral Requirements

- The assuming (re)insurer must maintain financial strength ratings from two or more rating agencies acceptable to the commissioner...
  - Standard and Poor’s
  - Moody’s Investor Service
  - Fitch Rating
  - A. M. Best Company, or
  - Any other Nationally Recognized Statistical Rating Organization
Reserve Credit Security

Proposed NAIC Model Regulation 786 Collateral Requirements

The maximum rating assigned will correspond to the financial strength (FS) rating...the lowest such FS rating received from the two or more rating agencies will determine the maximum rating assigned by the commissioner.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Best’s</th>
<th>S &amp; P</th>
<th>Moody’s</th>
<th>Fitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secure - 1</td>
<td>A++</td>
<td>AAA</td>
<td>Aaa</td>
<td>AAA</td>
</tr>
<tr>
<td>Secure - 2</td>
<td>A+</td>
<td>AA+, AA, AA-</td>
<td>Aa1, Aa2, Aa3</td>
<td>AA+, AA, AA-</td>
</tr>
<tr>
<td>Secure - 3</td>
<td>A</td>
<td>A+, A</td>
<td>A1, A2</td>
<td>A+, A</td>
</tr>
<tr>
<td>Secure - 4</td>
<td>A-</td>
<td>A-</td>
<td>A3</td>
<td>A-</td>
</tr>
<tr>
<td>Secure - 5</td>
<td>B++, B+</td>
<td>BBB+, BBB, BBB-</td>
<td>Baa1, Baa2, Baa3</td>
<td>BBB+, BBB, BBB-</td>
</tr>
</tbody>
</table>
Reserve Credit Security

Proposed NAIC Model Regulation 786 Collateral Requirements

- Other noteworthy provisions
  - Certified reinsurer must be licensed in a qualifying jurisdiction
    - Acceptable reinsurance regulatory system, etc.
  - Reciprocity for US reinsurers
  - Determination made by Commissioner
- Applies to affiliate transactions
- Applies to reinsurance agreements after the effective date
- May be restricted to business not previously ceded
Reserve Credit Security

Proposed NAIC Model Regulation 786 Collateral Requirements

• In case of a downgrade...the commissioner shall assign a new rating in accordance...
  • Meet the security requirements of the new rating for all business
• In the case of an upgrade...the commissioner shall assign a new rating in accordance...
  • Meet the security requirements of the new rating on prospective basis
  • Maintain security requirements of previous rating for all contracts in force
• What happens to intervening reserve credit for reinsurance in the case of downgrade?
  • Current language implies the ceding company can not take reserve credit until security requirements are met
  • Would require reposting of reserves and capital
  • NY language gives commission discretion to allow ceding company to continue to take reserve credit as long as reinsurer can meet benefit obligation
Questions?
RAPA

• Reinsurance Administration Professionals Association
• In existence in some form for over 25 years
• Started as a small group meeting prior to CRC
• Now legal, non-profit organization with 120 members
• Works on promoting education, standards, communication with reinsurance admin community and industry in general
• Develops course content with LOMA, publishes standards on data and reporting, auditing
• reinsadmin.org
Agenda

• Current areas of activity

• Future directions
Treaties today

• Lawyers
  • Used to be peripheral, consulted on an exception basis
  • Integral part of treaty production
  • Some companies treaty production housed in Legal area

• Much more legal document
  • Structure
  • Contents
  • Language
Treaties today

• Greater discipline
  • No more napkins from the bar
  • No more treaties pending for years
  • Supporting documentation exists
  • RFP’s
  • Tighter internal and external regulations
  • Improved record-keeping and access

• Better production process
  • Standards
  • Communication
  • Controls
Treaty Developments

• Regulatory
  - FATCA
    - Foreign Account Tax Compliance Act
    - Wording largely settled
    - Complications with other jurisdictions
  - OFAC
    - Office of Foreign Assets Control
    - Wording largely settled
    - Complications from other jurisdictions
    - Operationally still in flux
  - Confidentiality/Privacy
    - Wording largely settled
Current areas of activity

- **Errors & Omissions**
  - Reinsurer-driven
  - Clearer definition of coverage
  - Coverage limitations
  - Time limits
  - Based on experience

- **Areas of negotiation**
  - Exclusions
  - Interest
  - Financial impact
  - Audit requirement
Current areas of activity

- **Jumbo Limits/Breaches**
  - Override E&O language
  - Based on reinsurer experiences
  - Seeks to protect the reinsurer and retrocessionaire from over-exposure
  - Provides potential support for the ceding company within process and coverage parameters
  - Capacity limitations
  - “Knowledge” limitations
Current areas of activity

- Financial Impairment
  - Developed from Insolvency wording
  - Provides rights to the ceding company upon trigger(s)
    - Solvency ratios
    - Ratings
  - Provides options to the ceding company
    - Recapture
    - Increased security
    - Alteration to premium payments
  - Provides options to the reinsurer
    - Cure period
    - Other security
    - Transfer to another company
Current areas of activity

- Areas of negotiation
  - Cure period
  - Recapture fee
  - Trigger levels
  - Recapture scope
Current areas of activity

Rate Guarantee

- Current standard wording says not guaranteed
- May reference deficiency reserves
- Capped at the valuation premium
- Limitations have been added over time
  - All YRT business
  - All similar business – defined
  - Following a direct premium increase
- Ceding company options on increase
  - Recapture
  - Recapture fee
Emerging issues

- New CSO table
  - Some ages/durations already above the rate
  - Logistical and economic issue

- PBR
  - Impact unknown
Future directions

- Healthy negotiation on treaties
  - Financial impairment
  - Recapture
  - Rate Guarantees

- Greater complexity – Product, treaty structure, reporting, analysis

- Continued development as a professional, legal contract
  - But its an operational guide too
SOCIETY OF ACTUARIES
Antitrust Compliance Guidelines

Active participation in the Society of Actuaries is an important aspect of membership. While the positive contributions of professional societies and associations are well-recognized and encouraged, association activities are vulnerable to close antitrust scrutiny. By their very nature, associations bring together industry competitors and other market participants.

The United States antitrust laws aim to protect consumers by preserving the free economy and prohibiting anti-competitive business practices; they promote competition. There are both state and federal antitrust laws, although state antitrust laws closely follow federal law. The Sherman Act, is the primary U.S. antitrust law pertaining to association activities. The Sherman Act prohibits every contract, combination or conspiracy that places an unreasonable restraint on trade. There are, however, some activities that are illegal under all circumstances, such as price fixing, market allocation and collusive bidding.

There is no safe harbor under the antitrust law for professional association activities. Therefore, association meeting participants should refrain from discussing any activity that could potentially be construed as having an anti-competitive effect. Discussions relating to product or service pricing, market allocations, membership restrictions, product standardization or other conditions on trade could arguably be perceived as a restraint on trade and may expose the SOA and its members to antitrust enforcement procedures.

While participating in all SOA in person meetings, webinars, teleconferences or side discussions, you should avoid discussing competitively sensitive information with competitors and follow these guidelines:

• Do not discuss prices for services or products or anything else that might affect prices
• Do not discuss what you or other entities plan to do in a particular geographic or product markets or with particular customers.
• Do not speak on behalf of the SOA or any of its committees unless specifically authorized to do so.
• Do leave a meeting where any anticompetitive pricing or market allocation discussion occurs.
• Do alert SOA staff and/or legal counsel to any concerning discussions
• Do consult with legal counsel before raising any matter or making a statement that may involve competitively sensitive information.

Adherence to these guidelines involves not only avoidance of antitrust violations, but avoidance of behavior which might be so construed. These guidelines only provide an overview of prohibited activities. SOA legal counsel reviews meeting agenda and materials as deemed appropriate and any discussion that departs from the formal agenda should be scrutinized carefully. Antitrust compliance is everyone’s responsibility; however, please seek legal counsel if you have any questions or concerns.
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Presentations are intended for educational purposes only and do not replace independent professional judgment. Statements of fact and opinions expressed are those of the participants individually and, unless expressly stated to the contrary, are not the opinion or position of the Society of Actuaries, its cosponsors or its committees. The Society of Actuaries does not endorse or approve, and assumes no responsibility for, the content, accuracy or completeness of the information presented. Attendees should note that the sessions are audio-recorded and may be published in various media, including print, audio and video formats without further notice.
Reinsurance Administration

PRESENTER:
GREG LAROCHELLE
HEAD, RISK REPORTING & REINSURANCE
RBC INSURANCE

--------
CHAIR, RAPA
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Introduction
Overview

• Administration of reinsurance treaties is often under-appreciated, but is vital to their long-term health and effectiveness for both parties. As products and reinsurance structures continue to evolve against the backdrop of legacy treaties, reinsurance administration challenges have increased. This session will discuss common challenges, current control and reporting standards, and suggestions for future consideration.
Agenda

• Industry Reinsurance Administration Resources  reinsadmin.org

• Reinsurance Administration Role

• Historical Administration Issues

• Best Practices

• Uses and Importance of Quality Data

• Current Issues & Challenges

• Future Outlook
Industry Reinsurance Administration Resources
Reinsurance Administration Professionals Association “RAPA”

• Non-profit association with ~120 members
  o Direct writers, Reinsurers, Retrocessionaires, Vendors

• Develops and promotes education, standards, and forums for reinsurance admin community and industry in general

• Develops course content with LOMA, publishes standards on data and reporting, auditing

reinsadmin.org
Supplement to Reinsurance

- Reinsurance Overview
- Reinsurance Operations Overview
- Reinsurance Basics
- Supplement to the Reinsurance Basics
Reinsurance Administration – Evolution of role

- **Significant portfolio for the business**
- **Key to business strategy (innovation)**
- **Admin from “Cradle to Grave”**
- **Increased Governance (Policy)**
- **Errors can be costly (PV impacts)**
- **“Scorecard” reinsurers (credit)**
- **Active Management (Strategy)**
- **Accounting/Accruals**
- **Systems (automation, controls)**
Historical Administration Issues
Reinsurance Administration....not so long ago...

- Acquisitions
- Over/Under paying premiums
- Missing Policies
- Inaccurate reserving
- Quarterly Volatility
- Claims oversights
- Strains relationships
- UW errors
- Retention/Capacity issues
- Enacting E&O frequently
- Labour intensive
- NIE high
- Do versus Analyze/Strategize
Best Practices
Lock Down Reinsurer Data Requirements & Translation

Required Data & Mapping Tables

<table>
<thead>
<tr>
<th>Field Names</th>
<th>Data Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>John Smith</td>
</tr>
<tr>
<td>DOB</td>
<td>01/31/1970</td>
</tr>
<tr>
<td>Plan</td>
<td>Term 100</td>
</tr>
<tr>
<td>Face Amount</td>
<td>10,000,000</td>
</tr>
<tr>
<td>Reinsured</td>
<td>9,000,000</td>
</tr>
<tr>
<td>Treaty</td>
<td>ABC123</td>
</tr>
</tbody>
</table>
Premium & Claims Administration – Automation

Code treaty parameters

Automate data feeds in/out

Premiums – Claims = Net due/owed
Current Issues & Challenges
System still can’t do everything....

- Majority of business is automated
- Manual Processing
  - Facultative, Conversions, Special Quotes
  - Other Errors, Legal Settlements, etc

- Profit Sharing
- Modified Coinsurance
- Lapse/Other Experience
- Credit/Unlicensed
- Group, Annuity
- Catastrophe

- Need for reconciliation with reinsurers
- Cost too much to automate
- Termination not viable
- Time/Priorities
Common Issues – Facultative (non-integrated systems)

- Underwriter works with reinsurers
- Determines reinsurer(s) placement and amount

$10,000,000 - 100% reinsured, Do not keep any retention

Incorrect Coding - Manual

$10,000,000 - 100% reinsured; Do not keep any retention

Timely feedback from reinsurers is key
Common Issues - Conversions

- Follow the original policy/amount (or at least try)
- Point-in-scale premium rate appropriate for the insured's original issue age and current duration.

Conversion Matrix

http://reinsadmin.org/initiatives/
Common Issues – Incorrect Treaty Parameters

- Premiums (Direct/Reinsurance Rates)
- Allowances
- Taxes
- Retention (Excess vs Quota Share)
- Recapture Eligibility
- Reinsurer Share %
- Cash Values
- Reserves (decrements)
- Benefit Eligibility (WP/AD&D)
- YRT vs Coinsurance
- Flat Extra’s
- Joint Method
- Joint Age Basis
- Issue/Resident State
- ROP on Surrender/Death
- Recapture
- Plan Codes
- Minimum Cessions
- Treaty Effective dates (vs application date)
Uses and Importance of Quality Data
Uses and Importance of Quality Data (aside from Treaty compliance)

**Studies**
- Experience Studies (Mortality, Morbidity, Lapse, etc)
- Data Mining
- Predictive Analytics

**Assumptions**
- Best Estimates
- Trends
- Abnormalities

**Financial Reporting**
- Income Statements
- Appointed Actuaries Report
- Regulators
Trending, Controls, Reports & Strategy
Trending Analytics

Continuous Analysis of Portfolio

- Premium
- Claims
- New Business
- Terminations
- Product View
- Treaty View
- Reserves
Control Reports - Examples

**Premiums**
- Missed Conversions
- Non-Renewals
- Large NAAR Fluctuations
- Over Reinsurance
- Policy Premium %
- Post-Level Term
- Per Life Retention

**Claims**
- Historical Ad hoc Adjustments
- Legal Claims/Expenses
- Missed Reinsurance on Claim
- Business Decisions
- Waiver of Premium
- Expenses & Interest
- ROP on Death
Keys to Success – Strategic Planning

- **Communicate**: Documentation & Mapping
  - Reinsurers, valuation, finance

- **Resourcing**: Adequate & Knowledgeable staff
  - Varying position levels and experience

- **Stakeholder**: Engage early and on an on-going basis
  - New products, IT initiatives/upgrades, UW, etc

- **Data Requirements**: Obtaining adequate level of detail required to execute
  - Smoker status, gender, plan, treaty, etc

- **Workflow/Gantt chart**: Ensure proper timing and roles/responsibilities
  - Expected Product launch/Re-price, reinsurance lead of the project
Future of Reinsurance Administration

- Reinsurance Administration involved early in new treaty negotiations
  - Realistic
  - Cost/Benefit/Timing
- Manual ⇒ Automation
- Improved Analysis
  - Loss Ratios & Results y-o-y
  - By Reinsurer, Treaty, Product
- Automating Premium Audits
- Recaptures
  - Streamline legacy admin
  - Other
- Increased Thought Leadership in managing portfolio
- Innovation/AI
Keys to Success – Strategic Planning

Join us in celebrating RAPA’s 20th Anniversary in St. Petersburg, Florida

Sunday, October 22nd – Tuesday, October 24th
The Vinoy Renaissance Resort & Golf Club
501 5th Avenue N.E.
St. Petersburg, FL 33701

For reservations visit our website:
Reservation Toll Free #: 1-888-769-3090
Use group code:
“RAPA 2017 Fall Conference”
ReinsAdmin.org

Register online today!
Questions?
2017 Life and Annuity Reinsurance Seminar

Timothy Paris, FSA, MAAA
Ruark Consulting LLC
Reinsurance of Policyholder Behavior Risk
August 14, 2017
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<table>
<thead>
<tr>
<th>Source: LIMRA</th>
<th>Variable Annuities</th>
<th>Fixed Indexed Annuities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Sales (p.a.)</td>
<td>~$150 billion</td>
<td>~$100 billion</td>
</tr>
<tr>
<td>Net Sales (p.a.)</td>
<td>~$0 billion</td>
<td>?</td>
</tr>
<tr>
<td>% Qualified</td>
<td>65%</td>
<td>55%</td>
</tr>
<tr>
<td>% Guaranteed Living Benefit</td>
<td>77%</td>
<td>68%</td>
</tr>
</tbody>
</table>
VA Industry Data

22 participating companies

2008 to present

68 million contract years of exposure

+22% from last year
Surrenders vary by living benefit type

Surrender Rate

Years Remaining in Surrender Charge Period

0% 30%

7 or more 6 5 4 3 2 1 0 -1 -2 -3 or more

GMWB
None
GLWB
GMIB

ruark™
Experience varies by company, but why?

GLWB, Normalized by Years Remaining in Surrender Charge Period
Surrenders have decreased since the crisis
However, a different trend for GLWB “spike”

Nominal basis

Surrender Rate

0% 10% 20% 30% 40% 45%

3Q 09 3Q 10 3Q 11 3Q 12 3Q 13 3Q 14 3Q 15

ATM
ITM 5-25%
ITM 25-50%
ITM 50+%

ruark™
Most GLWBs are actuarially out-of-the-money
GLWB moneyness basis matters

Surrender Rate

Spike - nominal

Spike - actuarial
GLWB income utilization affects surrenders

<table>
<thead>
<tr>
<th>Years Remaining in Surrender Charge Period</th>
<th>None</th>
<th>Full or Less Than</th>
<th>Excess</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 or more</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>4</td>
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<tr>
<td>3</td>
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<tr>
<td>2</td>
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<tr>
<td>1</td>
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<tr>
<td>-2</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>-3 or more</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Income utilization varies by age and tax status

GLWB Partial Withdrawal Frequency

Attained Age

Qualified

Nonqualified
Income utilization efficiency has increased

GLWB Partial Withdrawal Frequency and Amounts
Income commencement is the key question

GLWB Partial Withdrawal Frequency

- Continuation
- Commencement
- Nonqualified
- Qualified
Overview of FIA Industry Experience
FIA Industry Data

12 participating companies

2007 to present

13 million contract years of exposure

+30% from last year
VA and FIA surrenders are lower with GLWB
FIA surrenders vary based on interest credited

<table>
<thead>
<tr>
<th>Years Remaining in Surrender Charge Period</th>
<th>Surrender Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 or more</td>
<td>0%</td>
</tr>
<tr>
<td>9</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
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<tr>
<td>5</td>
<td></td>
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<tr>
<td>4</td>
<td></td>
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<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0-2%</td>
</tr>
<tr>
<td>-1</td>
<td></td>
</tr>
<tr>
<td>-2</td>
<td></td>
</tr>
<tr>
<td>-3 or more</td>
<td></td>
</tr>
</tbody>
</table>
Behavioral Analytics Framework
Industry Data

Traditional Analysis

Statistical Techniques

Expert Judgment
Model Development

Start with maximum data set (industry)
Extract relevant subset for a company
Develop a model on this basis
Do likewise using only company’s data
Customize model to reflect both, so that most important factors are included, with stable coefficients, balancing goodness-of-fit and predictive power

You can go far with Generalized Linear Models (GLM)
Logistic Regression Model

\[
\ln \left( \frac{\mu}{1 - \mu} \right) = \beta_0 + \sum \beta_i x_i
\]

“Log of odds” is a linear function of key factors
Binary values, such as surrenders or deaths
Goodness of Fit

Predictive Power
Bayesian Information Criterion

Rewards goodness-of-fit to historical data, but penalizes for additional factors used in your model

One of many metrics to help guide your model selection process
Actual-to-Expected Ratios

“Predictive Power” in the new vernacular

Develop E using train data, compare to A from test data

Out-of-sample, out-of-time, and k-fold cross-validations

Examine in aggregate, by cohorts, and over time

Look at range of outcomes and tails
Expert Judgment is Vital

Business context, sensibility, materiality, parsimony

Let the data speak

More data usually beats more complex models

Build simple models for complex data, and complex models for simple data
Sample Models
VA Surrenders

- Yrs Remaining in Surr Chg Period
- LB Type and PW History
- Moneyness
- Contract Size
- Interactions
Using industry data

For each factor coefficient, standard error terms \( \left( \frac{\sigma}{\mu} \right) \) are typically very small ~ 1/300 to 1/100.

Then testing predictive power using 5-fold cross-validation, average A/E errors are also very small ~ 1/700.
Using company-only data

In some cases, company-only data is insufficient to even identify the key factors observed in the industry data, or it demonstrates factor coefficient estimates that are not sensible.

Even if they do, the coefficient standard error terms \( \left( \frac{\sigma}{\mu} \right) \) can be 20x larger.

Similarly, the average cross-validation A/E errors can be 10x larger.
Combining industry and company-only data

A customized combination of industry and company-only data can produce a vastly superior model with much better fit and predictive power.

Such a model should identify and quantify the effects of each additional factor in the presence of the others, and the interactions between them.

Confidence increases with additional data.
Integration Across Behaviors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-2.0</td>
</tr>
<tr>
<td>7</td>
<td>-4.0</td>
</tr>
<tr>
<td>6</td>
<td>...</td>
</tr>
<tr>
<td>Years</td>
<td>...</td>
</tr>
<tr>
<td>Remaining</td>
<td>1</td>
</tr>
<tr>
<td>in SurrChg</td>
<td>0</td>
</tr>
<tr>
<td>Period</td>
<td>-1</td>
</tr>
<tr>
<td></td>
<td>-2</td>
</tr>
<tr>
<td></td>
<td>-3</td>
</tr>
<tr>
<td>LB Type</td>
<td>GMDB only</td>
</tr>
<tr>
<td>and PW History</td>
<td>Less than Full</td>
</tr>
<tr>
<td></td>
<td>Full</td>
</tr>
<tr>
<td></td>
<td>Excess</td>
</tr>
<tr>
<td>Moneyness</td>
<td>OTM</td>
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<tr>
<td></td>
<td>ATM</td>
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<td></td>
<td>ITM Band1</td>
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<td></td>
<td>ITM Band2</td>
</tr>
<tr>
<td></td>
<td>ITM Band3</td>
</tr>
<tr>
<td></td>
<td>ITM Band4</td>
</tr>
<tr>
<td>Size</td>
<td>log (AV)</td>
</tr>
<tr>
<td></td>
<td>-0.2</td>
</tr>
</tbody>
</table>

Very important to model behavior on integrated basis
VA GLWB / GMIB Income Utilization

- Attained Age
- Tax Status
- Historical Income Utilization
- Contract Size
- Interactions
The power of more data

As above, but for GWLB / GMIB income utilization, need to address complexities of frequency and severity relative to guarantee amounts.

<table>
<thead>
<tr>
<th></th>
<th>Average A/E Error</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less Than</td>
</tr>
<tr>
<td>Industry</td>
<td>0.20%</td>
</tr>
<tr>
<td>Company-only</td>
<td>2.80%</td>
</tr>
<tr>
<td>Customized</td>
<td>2.00%</td>
</tr>
</tbody>
</table>

Customized model using industry data can reduce error by half where it matters most, for Full income utilization.
Reinsurance
Benefits of Behavioral Analytics

Allows for company-level customization from max data set (industry)

Consistent mathematical framework for assumption setting and review/updates

Goes beyond the endless series of reactionary point estimates to quantify range of behavioral values, which can form the basis of a bespoke reinsurance transaction
Advantages

Ceding Company
- Mitigate non-core risks
- More predictable financials
- Improve transparency
- Competitive edge

Reinsurance Company
- Growth market
- Avoid capital markets exposure
- Manage from first principles
- Diversified portfolio
Policyholder Behavior Reinsurance

Understand Your Risk Profile

Analyze Behavior

Design and Place Reinsurance
Assumptions

Principles-Based Framework

Experience
Behavior = Model + Δ
Policyholder Behavior Reinsurance

- Surrenders for living benefit guarantees
- Repeated adverse deviation
- “Cat” cover for assumption changes
Implementation
Discussion
Reserve Financing and Captive Reinsurance

Ryan Stevens, FSA, MAAA
VP, Structuring and Product Specialist
Global Financial Solutions
RGA

Xueli Zhang, FSA, CFA, MAAA
VP and Actuary
Global Financial Solutions
RGA

SOA Life & Annuity Reinsurance Seminar
August 14, 2017
Audience Questions

- Who has worked on reserve financing transactions?
  - Pre AG 48
  - Under AG 48/New Term and UL Reserve Financing Model Regulation
  - PBR compliant solutions

- What was your biggest hurdle?
  - Regulators
  - Rating agencies
  - Internal sign-offs
  - Solution provider
Agenda

- History of Reserve Financing
- Current State of the Reserve Financing Market
- Captive Reserve Financing Roadmap to Success
  - Getting Started – benefit / cost analysis
  - Internal Engagement
  - External Counterparties
  - Dive In – the real work
  - Finish Line
- Closing Thoughts
- Q&A
History of Reserve Financing

Long History of the Use of Reinsurance to Provide Capital

<table>
<thead>
<tr>
<th>Year</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-2000</td>
<td>XXX and AXXX drove greater need due to more conservative reserving requirements for Term and UL with secondary guarantees</td>
</tr>
<tr>
<td></td>
<td>Initially, similar to early pre-XXX/AXXX surplus relief transactions</td>
</tr>
<tr>
<td></td>
<td>First bank vehicles: capital market securitization structured and guaranteed by monolines</td>
</tr>
<tr>
<td>2000-2006</td>
<td>Solutions funded by banks on a recourse basis</td>
</tr>
<tr>
<td>2006-2007</td>
<td>Market effectively closed due to financial crisis</td>
</tr>
<tr>
<td>2008</td>
<td>Long-dated letter of credit (LOC) on a recourse basis structured by banks</td>
</tr>
<tr>
<td>2009-2010</td>
<td>Non-recourse LOCs</td>
</tr>
<tr>
<td>2011</td>
<td>Captive structures with credit-linked notes (CLNs) or excess of loss (XOL) agreements supported by professional reinsurers or other investors</td>
</tr>
<tr>
<td>2012-2014</td>
<td>AG48 – Applies to all new reinsurance transactions covering XXX and AXXX</td>
</tr>
<tr>
<td>2015</td>
<td>PBR and Term/UL Insurance Reserve Financing Model Regulation (sun-setting of AG48)</td>
</tr>
<tr>
<td>2017</td>
<td>Increasing regulatory and public scrutiny - NAIC responded to pressure by drafting a white paper and hiring a consultant, Neil Rector, to study the regulatory framework of captive reinsurance and develop proposals</td>
</tr>
</tbody>
</table>

History of Reserve Financing

Estimated Costs

- **Summary:** Started high, driven lower over time
  - Early surplus relief; 1-2% of statutory capital provided
    - Tax impact may be reflected
  - XXX via early reinsurance: similar 1-2%
    - No AXXX
  - Bank vehicles
    - First bank vehicles: dependent on repo market rates and monoline fees. Rapid downward pressure.
    - 2006-2007: bank funded solutions with recourse; 1-1.5%
    - 2008: market effectively closed due to financial crisis
    - 2009-2010: long-dated letter of credit with recourse; 2.5%, decreasing rapidly to 1-1.5%
    - 2011: non-recourse LOCs; 1-1.25% or lower
  - 2012-2014: CLNs and XOL; less than 1% and falling
Current Reserve Financing Market

Before AG48/AG48 Exempt

- Goal: fund excess level of reserves (Statutory – Economic)
  - Various asset types available for funding
Current Reserve Financing Market

AG48/Term and UL Reserve Financing Model Regulation

- Goal: fund excess level of reserves (Statutory – Economic)
  - Various asset types available for funding
  - VM 20 layer must be funded by “Primary Security” assets
Current Reserve Financing Market

Regulatory concerns
- Security of policyholders is the primary concern – are there high quality assets immediately available to meet future obligations of the ceding company?
- Recourse - ultimate liability: in a severe scenario, who pays?

Current Options

- Debt, Equity, or existing surplus to fund full statutory reserve
  - Expensive – not supportable under current market pricing

- Reinsurance Solutions
  - Third-party Reinsurance
    - Requires utilization of the reinsurers balance sheet (most typically an accredited or certified reinsurer)
    - Tends to be more expensive, but less complex and lower regulator involvement
    - Transaction may have a negative tax impact on cedant
  - Affiliated (Captive-based) Reinsurance
    - Tends to be less expensive, but more complex and high regulator involvement
    - XOL or CLN to achieve reserve credit for non-economic reserves ("Other Security" under AG48)
    - Bank solutions also available (Annual evergreen LOCs, conditional LOCs, etc.)
    - Primary Securities to achieve reserve credit for VM20 layer of reserves under AG48
Current Reserve Financing Market

Captive Based Solution - XOL

- Captive reinsures mortality risk at fixed premium rates
- XOL Provider pays claims up to full Statutory Reserves less Qualified Reserves (Economic Reserve) once other sources exhausted. XOL provider also assumes Captive’s collection risk under mortality reinsurance.
Current Reserve Financing Market

Captive Based Solution – Credit Linked Note Structure (Note for Note)

- Captive and SPV exchange a SN for a CLN
  - CLN is allowed as an admitted asset on Captive’s balance sheet
  - Coupon difference between the CLN and SN is the risk fee

- If Captive redeems the CLN to pay reinsurance claims, the Financing Provider funds the redemption of the CLN
Current Reserve Financing Market

Recent Transactions in the Market

- AG48 exempt/grandfathered transactions
  - XXX/AXXX - Non-captive based reinsurance reserve financing
  - XXX/AXXX - Captive based reserve financing

- AG48 Compliant Transactions
  - XXX – Captive based Other Security only reserve financing
  - XXX – Captive based Primary Securities and Other Security reserve financing
  - AXXX ???
    - Different risks and levels of VM20 layer reserves vs. XXX
    - Projecting future VM20 reserves is a challenge and can introduce significant potential volatility to the funding requirements

- PBR Compliant Transactions ???
  - Reserve financing transactions will require Primary Securities only
  - The concept of Other Securities will become unnecessary with the sunset of XXX and AXXX reserve methodologies
Captive Reserve Financing – Roadmap to Success
A Journey of Partnership

- Getting Started – benefit / cost analysis
- Internal Engagement
- External Counterparties
- Dive In – the real work
- Finish Line
Getting Started

Determine the Financing Need

- Identify the block(s) of business
  - XXX and/or AXXX
  - Inforce and/or new business

- Determine the redundancy
  - Redundancy = XXX/AXXX reserve - economic reserve
    - If AG48 grandfathered, economic reserve is defined by ceding company
    - If not, economic reserve is AG48 reserve (Primary Security level)
  - Measure at current period, but also into the future – can evolve quickly!

- Set parameters: structure tenor, target closing date, general terms
Getting Started

Measure the Potential Benefits

- Capital needs/returns
  - Existing financing arrangement
  - Alternative uses of capital released
  - Competitive advantage
    - New business ROI may be significantly improved with financing

- Tax benefit
  - Full amount of tax reserve is still deductible
## Getting Started

Reserve Financing is the Best Option – Can’t Beat That Tax Break!

<table>
<thead>
<tr>
<th>Pricing Scenario</th>
<th>Pricing IRR*</th>
</tr>
</thead>
<tbody>
<tr>
<td>XXX Stat and Tax No Reserve Financing</td>
<td>7.4%</td>
</tr>
<tr>
<td>VM20 Stat and Tax No Reserve Financing</td>
<td>9.9%</td>
</tr>
<tr>
<td>XXX Stat and Tax Financing at level of VM20</td>
<td>16.5%</td>
</tr>
</tbody>
</table>

*From a recent SOA study performed by Milliman “Impact of VM-20 on Life Insurance Product Development”*
Internal Engagement

Get Everyone on Board

- Secure senior management buy-in
  - Make sure they understand the structure and have a clear picture of cost/benefits
  - Gauge willingness to provide resources when the unexpected arises
  - Have an advocate to pitch the transaction to the board of directors

- Other department commitment
  - Near full time required for some employees
  - Part time support required from many others
Internal Engagement

Build the Team

- Executive / project sponsor
- Project management
- Actuarial
  - Pricing leader
  - Pricing / valuation / modeling
- Accounting
- Legal
- Other: tax, investment, administration, etc.
External Counterparties

Financing Provider – Track Record Matters

- **Criteria**
  - Client experience
  - Technical expertise
  - Execution certainty

- **Considerations**
  - Financing cost
  - Counterparty exposure limits
  - Relationship
  - Split between multiple partners?
External Counterparties

Regulators – Communicate Early and Frequently!

- Decide captive’s state of domicile
  - There are some pros and cons for using the same state as ceding company

- Anticipate regulator’s “hot-button” issues
  - Preference between different structures and treaty mechanisms
  - Minimum required capital level of the captive
  - Accepted financing as “Other Security” under AG48

- Transaction may be reviewed by the NAIC Reinsurance Financial Analysis Working Group (ReFAWG)
Dive In – The Real Work

Actuarial

- Ceding Company provides the requested data
  - Projections
  - Product and policy information
  - Assumptions and supporting experience

- Financing Provider underwrites the risks
  - Term business is primarily mortality risk
  - ULSG is mortality, but also lapse, premium persistency, and investment risk
  - Mix of business can reduce risk through synergies
Dive In – The Real Work

Actuarial

- **Build the deal model**
  - Deal model incorporates all material provisions and risks
    - Needs to work in a wide range of scenarios
  - Likely to use Ceding Company’s cash flow projections as inputs
    - Validation of results and model representations and warranties are key

- **Communication**
  - Multiple rounds of model revisions and discussions
  - Financing Provider helps Ceding Company identify company specific issues
  - Work together to understand the risks and find the solutions
Dive In – The Real Work

Legal

- Construct legal documents
  - Captive formation documents
  - Captive management documents
  - Reinsurance documents
  - Financing documents
  - Legal opinions
  - Certificates

- Preliminary filing
  - Establish captive, Form D filing

- Keep the ongoing communication with the regulator(s)
Dive In – The Real Work

Provision Refinement

- Each transaction is customized
  - To meet the specific objectives / constraints of the Ceding Company
  - To keep the risk level within the reasonable range

- Reinsurance Treaty
  - Funds withheld level
  - Experience refunds
  - Investment Guidelines
    o Captive’s surplus assets
    o Ceding Company’s funds withheld assets
Dive In – The Real Work

Provision Refinement

- **Master Transaction Agreement**
  - Representations, Warranties, and Covenants
  - Note increase / decrease
  - Tax treatment
  - Dividend and the level of capital retained in the captive
  - Draw mechanics – timing, amount, and priority of other payments
  - Treatment of third party reinsurance
  - Reporting
Finish Line

File with the Regulator(s)

- Finalize legal documents and deal model
- Expect an iterative process of questions, answers, and more questions with the regulators(s)
- Final filing and regulatory approval
  - Sign final legal documents, exchange notes
  - Reinsure business to captive
- Prepare for ongoing maintenance
  - Periodic reporting including settlements, experience, etc.
A Journey of Partnership

- Getting Started – benefit / cost analysis
- Internal Engagement
- External Counterparties
- Dive In – the real work
- Finish Line
Closing Thoughts

- Financing Provider’s credibility and reliability matters
- Early engagement and total transparency
- Flexibility matters
Reinsurance of Annuity Products

Life and Annuity Reinsurance Seminar
August 15, 2017
Ari Lindner
Variable Annuity Reinsurance
Introduction to Variable Annuities

- Tax-Advantaged Savings / Investment Vehicle
- Separate Account product
  - Policyholder directs investments
  - Policyholder bears investment risk
- Account Value fluctuates with performance of selected funds
- Primary competitive advantage over mutual funds
  - Tax deferral
  - Additional guarantees
Guarantees generate a claim payment if

- Account / Funds underperform a benchmark, AND
- The policyholder has an insurable event or takes a specific action

Fund Benchmarks:

- Return of Premium / Principal
- Reset / Ratchet – market-dependent growth
- Roll-up – fixed growth rate

Insurable event / action

- Death
- Annuitzation
- Periodic / Systematic Withdrawals to Account Exhaustion
- Persist to a specified policy duration
Variable Annuity Reinsurance
Introduction to VA Guarantees

- Key risk / profit drivers for base product
  - Persistency
  - Fund performance

- Key risk / profit drivers for VA Guarantee
  - Fund performance
  - Interest rates
  - Policyholder behavior – lapse / withdrawal / annuitization
    - Particularly correlation between behavior and fund performance
  - Mortality / Longevity – typically to a much lesser degree
Variable Annuity Reinsurance
Motivation / Goals

- Transfer risk associated with VA Guarantee
  - Hedgeable Risk – Equity markets, Interest rates
  - Non-Hedgeable Risk
    - Financial – Basis, Correlation, Long-term volatility
    - Non-Financial – Mortality, Behavior (Lapse / Withdrawal / Annuitization)
- Reduce volatility of income statement / reserve / capital
- Improved accounting treatment (compared to hedging)
- Capital Release / divest non-core risk
- Monetize future profit
- Diversification
Variable Annuity Reinsurance
VA Guarantee Reinsurance Structures

- Risk transferred is connected to VA Guarantee claims
- Full Coinsurance / Proportional
  - Rarely available
- “Capital Markets” Reinsurance
  - Mimics or mirrors hedge risk management solutions
- “Structured” Reinsurance
  - Coinsurance with some form of non-proportional limits or features
- Assumption Reinsurance – full divestment of legacy book
  - Tends to be costly / motivated seller
Variable Annuity Reinsurance
Other VA Reinsurance Structures

- Fee stabilization reinsurance
  - Protects against fluctuations in base product fees caused by falling equity markets or fund values

- “Gap” risk reinsurance
  - Protects against risk of significant market movement in short period (over 10% in a single day, e.g.)

- “Mass Lapse” reinsurance
  - Protects against lost revenue from extreme lapse events

- Collateral enhancement
  - Reinsurer stands between onshore entity and captive to provide collateral / reserve credit
Variable Annuity Reinsurance
Types of Non-Proportional Limits / Features

- **Reinsurance Claim Limit**
  - Can be Annual or Aggregate over the lifetime of the treaty

- **Behavior Limit**
  - Maximum behavior level – for example, maximum annuitization rate for claims driven by annuitization behavior

- **Reinsurance / Cedant Claim Mismatch**
  - For example, reinsurance claim frequently a lump sum expected present value where insurer claim is a lifetime annuity

- **True-ups for Non-Hedgeable Risk Elements**
  - Deviations (vs. expected) of non-hedgeable risk elements may require periodic true-ups
  - May be a minimum threshold within which deviations do not require true-up
Variable Annuity Reinsurance
Key Accounting Considerations

- VA Guarantee can be considered either insurance or a derivative
  - Treatment varies and may change over time

- Reinsurance of VA Guarantee reinsurance can be considered either insurance or a derivative
  - Treatment varies and may change over time

- Accounting treatment may be different for reinsurance vs. insurance

- Reserve and capital relief may be limited with certain structures
  - Collateral is typically required
Variable Annuity Reinsurance
Current Market

- Supply is severely limited
  - This has been the case for almost the entire history of VA Guarantees and VA Guarantee reinsurance (> 20 years)
- “Capital Markets” and “Structured” reinsurance is available
  - Very small number of active reinsurers
- Full Coinsurance is not typically offered
  - Can be obtained in certain limited situations, but may be cost-prohibitive
- Motivated sellers can divest through assumption reinsurance, but available price / structure may not be attractive
Fixed Annuity Reinsurance
Introduction to Fixed Annuities

- Tax-Advantaged Savings / Investment Vehicle
- General Account product
  - Insurer directs investments
  - Insurer retains investment risk
- Account Value credited with interest
  - Crediting rate is periodically reset, subject to a minimum guarantee
- Tend to be less popular in low interest rate environment
- Key risk / profit driver is investment spread
  - Disintermediation risk can be mitigated with Market Value Adjustment on surrender
Fixed Annuity Reinsurance
Motivation / Goals

- Investment Risk transfer
  - Ceding company reduces investment / ALM risk
  - Reinsurer receives low-cost funds to support a more aggressive investment portfolio / yield assumption
- Increase product competitiveness by accessing reinsurer’s investment expertise
- Capital Release / divest non-core risk
- Monetize future profit
  - Inforce Blocks with high interest rate guarantees may have negative value but reinsurance allows ceding company to focus on more desirable opportunities
- Diversification
Fixed Annuity Reinsurance
Reinsurance Structure

- Tends to be full risk transfer

- Coinsurance
  - Assets transferred to reinsurer
  - Reinsurer controls investments
    - Typically within defined investment guidelines

- Funds withheld
  - Assets remain on insurer’s balance sheet
  - May require separate investment management agreement
  - May not be able to achieve all reinsurance goals
Fixed Annuity Reinsurance
Current Market

- Fairly robust market – supply, demand, deal flow
- Persistent low interest rate environment is driving some demand
  - Spread compression and lower returns on capital
  - Rising rates may actually increase demand as it will reduce cost or reinsuring
    inforce blocks with higher guarantees
- Reinsurers are frequently niche players focused on asset accumulation
  - Fixed annuity blocks viewed as cheap source of funding
  - Credit quality can be a concern
Fixed Indexed Annuity Reinsurance
Introduction to Fixed Indexed Annuities

- Tax-Advantaged Savings / Investment Vehicle
- General Account product
  - Insurer directs investments
  - Insurer retains investment risk
- Account Value credited with interest
  - Crediting rate is linked to the performance of an index or fund
  - Typically subject to a minimum guarantee
- Frequently includes death and living benefits (similar to VA)
- Significant rise in popularity in recent years
- Key risk / profit driver is investment spread
  - Insurer needs to match the promised index performance while still earning a spread
Fixed Indexed Annuity Reinsurance
Motivation / Goals

- Can be similar to Variable Annuity reinsurance goals
  - FIAs offer similar guarantees to VAs
- Can be similar to Fixed Annuity reinsurance goals
  - Particularly around product competitiveness
- Can look to access reinsurer’s hedging expertise in regards to the index crediting strategy
  - Simple crediting strategies can be straightforward
  - More complex crediting strategies may require more sophisticated hedging techniques / technology
Fixed Indexed Annuity Reinsurance
Structure and Current Market

- Reinsurance structure similar to Variable or Fixed Annuity reinsurance, as appropriate based on the reinsurance goal(s)
- Accounting treatment may not always be clear
- Both demand and supply are low but expanding
- Further growth expected as competition increases
Reinsurance of Annuity Products

Summary

- Variable Annuity Reinsurance
  - VA Guarantees – limited availability, typically structured
  - Other more specialized VA reinsurance is available

- Fixed Annuity Reinsurance
  - Readily available
  - Reinsurers tend to be asset accumulators

- Fixed Indexed Annuity Reinsurance
  - Can have characteristics of any of the above as appropriate
  - May also reinsure to achieve complex or aggressive index crediting strategy
Reinsurance of Annuity Products

Life and Annuity Reinsurance Seminar
August 15, 2017
Ari Lindner
Reinsurance of Longevity Risk
Innovative Solutions for Managing Pension and Longevity Risk

Arnaud Bensoussan  
Vice President

David Lang  
Vice President
The Pension Risk Transfer Market is Growing and Going Global

Nordics data from Organisation for Economic Co-operation and Development (OECD) as of 2015.
A more recent wave of innovation has begun to help insurance companies in the UK, Netherlands and Canada manage their annuity risks.
Retired Lifetimes Have Increased Significantly

Male Period Life Expectancy From Age 65
(1970–2014)

Longevity Risk Should Be Part of the Pension Risk Equation Because Longer Life Increases Other Risks

Deterministic Stress on Liabilities (Impact of a 1% Decline in Rates and a 1% Increase in Mortality Improvements)

- If people **live longer** than expected, the **liability will grow**
- The larger liability will have a **longer duration**
- As a result, the pension fund will face **more interest rate risk** and **more duration risk**
- Pension funds with cost of living adjustments in the benefits have nearly double the exposure

Source: Pacific Global Advisors. For illustration only.
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Deterministic Stress on Liabilities (Impact of a 1% Decline in Rates and a 1% Increase in Mortality Improvements)

Source: Pacific Global Advisors. For illustration only.
Solutions For DB Pension Funds

Reinsurance of Longevity Risk: Innovative Solutions for Managing Pension and Longevity Risk
Since 2007, There Have Been More Than $300B in Pension Risk Transfer Transactions With Many Important Breakthroughs

**Buy-out**
Complete settlement of plan liability
- Longevity Risk
- Investment Risk

**Buy-in**
Plan investment that perfectly matches liability
- Longevity Risk
- Investment Risk

**Longevity Risk Transfer**
Converts unknown future liability into a fixed payment over time
- Longevity Risk

Data in USD. Sources: LCP, Hymans Robertson, LIMRA and Prudential analysis, as of December 31, 2016.
Longevity Risk Transfer Converts an Unknown Future Liability Into a Fixed Payment Over Time

Net Payments - Insurer to Plan
(Floating Benefits > Fixed Premium + Fees)

Net Payments - Plan to Insurer
(Floating Benefits < Fixed Premium + Fees)

Not yet used by U.S. pension plans.
It has come to Canada!

Source: Prudential. For illustration only.
The Market Now Has a Complete Set of Longevity Risk Transfer Solutions For Jumbo Pension Funds

<table>
<thead>
<tr>
<th></th>
<th>Fully Intermediated</th>
<th>Limited Recourse</th>
<th>Captive</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pension Scheme</strong></td>
<td>Benefits</td>
<td>Benefits</td>
<td>Benefits</td>
</tr>
<tr>
<td><strong>Full Recourse</strong></td>
<td>Premiums + fees</td>
<td>Premiums + fees</td>
<td>Premiums + fees</td>
</tr>
<tr>
<td><strong>Intermediary</strong></td>
<td></td>
<td>Limited Recourse</td>
<td>Schemed-Owned</td>
</tr>
<tr>
<td><strong>Reinsurer</strong></td>
<td></td>
<td></td>
<td>Captive</td>
</tr>
</tbody>
</table>

**Pros**
- Straight forward structure
- No need to run insurance company

**Cons**
- Risk of default by intermediary
- Maximizes cost
- Not scalable or reusable

**Pros**
- Reasonable cost
- No need to run insurance company

**Cons**
- Risk of default by intermediary
- Not scalable or reusable
- Difficult to execute

**Pros**
- Minimizes cost
- Maximizes control
- Scalable and reusable

**Cons**
- Need to run an insurance company

What about small schemes for whom this is too much bother and expense?
Solutions For Insurers
Managing Annuity Risks

Reinsurance of Longevity Risk: Innovative Solutions for Managing Pension and Longevity Risk
Since 2012, There Have Been More Than $90 Billion in Transactions for Insurers Managing Annuity Risks

Source: Prudential analysis of disclosed transactions. Note: many transactions are not disclosed. Transactions have occurred in Germany, Canada and the US but transactions sizes were not disclosed. *These deals provide tail risk protection against future longevity improvements.
Solvency II and Changing Capital Regimes in Canada and Elsewhere Have Driven Insurer De-risking – But Capacity is Limited

If we get this right, insurers will be able to more cost-effectively offer annuities to individuals, even in post Solvency II Europe.

**ANNUITY WRITER DE-RISKING CONTINUUM**

- Indemnity Reinsurance
- Index-Based, Tail Risk Protection (Capital Markets)

- ALM (Corp & Gov’t Bonds)
  - “Asset Repacks”
  - Private Loans & Illiquid Fixed Income

- Annuity Block Transfers
  - Annuity Block Reinsurance

- Longevity Reinsurance

**TO BE DEVELOPED**

- Syndication

- More efficient matching portfolios

- Syndication and sidecars

**MORE COUNTRIES**

If we get this right, insurers will be able to more cost-effectively offer annuities to individuals, even in post Solvency II Europe.
A New Capital Framework in Canada Will Change the Way Capital For Longevity Risk Impacts Canadian Life Insurers’ Balance Sheets

- The current Canadian capital requirements are based on the Minimum Continuing Capital and Surplus Requirements (MCCSR) framework, prescribed by the Office of Superintendent of Financial Institutions (OSFI).
- MCCSR will be replaced by the Life Insurance Capital Adequacy Test (LICAT) framework on January 1, 2018.
- Canadian Insurers will transition from a factor-based calculation to an economic-based model.

<table>
<thead>
<tr>
<th>Capital Components</th>
<th>Existing MCCSR</th>
<th>New OSFI LICAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discount Rate for PV</td>
<td>CALM Valuation Interest Rate</td>
<td>5.3% fixed</td>
</tr>
<tr>
<td>C2 Longevity Capital</td>
<td>1% × notional amount, no covariance of diversification benefit</td>
<td>Base Down and Trend Up Capital shocks with 100% correlation</td>
</tr>
<tr>
<td>OSFI supervisory capital target</td>
<td>150% (Total Ratio)/105% (Tier 1 Ratio)</td>
<td>100% (Total Ratio)/70% (Core Ratio)</td>
</tr>
</tbody>
</table>

LICAT will require more complex capital calculations and will lead Canadian insurers to adapt their hedging of longevity risk accordingly.
Canada Now Has its Own Mortality Tables and an Increased Awareness of Longevity Risk

- The 2014 Canadian mortality study was the first ever Canadian-specific pension plan mortality study.
- New mortality tables for use by pension plans came into effect in 2015. They indicated a significant increase in longevity, contributing to a higher awareness of longevity risk.
- Current tables forecast long-term rates of mortality improvement of 0.80%, which is lower than historical averages.

**Insurers and reinsurers are unlikely to price with improvements below historical averages. Convergence of these assumptions is likely to be a catalyst for growth and maturity in the Canadian pension risk transfer market.**

Q&A

Arnaud Bensoussan  
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Vice President, Longevity Risk Transfer  
david.lang@prudential.com  
860-534-3376

Pension Risk Transfer  
Prudential Retirement®
## Innovative Pension Risk Transfer Transactions Since 2014

<table>
<thead>
<tr>
<th>Plan Sponsor</th>
<th>Insurer</th>
<th>Date</th>
<th>Amount</th>
<th>Country</th>
<th>Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICI</td>
<td>Legal &amp; General</td>
<td>2014</td>
<td>$4.9B</td>
<td>UK</td>
<td>Several transactions</td>
</tr>
<tr>
<td></td>
<td>Prudential Plc.</td>
<td>2014</td>
<td>$0.5B</td>
<td>UK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Legal &amp; General</td>
<td>2015</td>
<td>$0.7B</td>
<td>UK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scottish Widows</td>
<td>2016</td>
<td>$0.9B</td>
<td>UK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Legal &amp; General</td>
<td>2016</td>
<td>$1B</td>
<td>UK</td>
<td></td>
</tr>
<tr>
<td>TRW</td>
<td>Undisclosed</td>
<td>-</td>
<td>-</td>
<td>CAN</td>
<td>Transacted in three countries</td>
</tr>
<tr>
<td></td>
<td>Legal &amp; General</td>
<td>2014</td>
<td>$3.9B</td>
<td>UK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MetLife</td>
<td>2014</td>
<td>$440M</td>
<td>US</td>
<td></td>
</tr>
<tr>
<td>Philips</td>
<td>Pension Insurance Corp</td>
<td>2015</td>
<td>$3.7B</td>
<td>UK</td>
<td>Transacted in two countries</td>
</tr>
<tr>
<td></td>
<td>Prudential, Legal &amp; General, OneAmerica</td>
<td>2015</td>
<td>$1.1B</td>
<td>US</td>
<td>Split between three insurers</td>
</tr>
<tr>
<td>Kimberly-Clark</td>
<td>Prudential, MassMutual</td>
<td>2015</td>
<td>$2.5B</td>
<td>US</td>
<td>Split between two insurers</td>
</tr>
<tr>
<td>JC Penney</td>
<td>Prudential</td>
<td>2015</td>
<td>-</td>
<td>US</td>
<td>Variable size</td>
</tr>
<tr>
<td>ASR</td>
<td>Legal &amp; General</td>
<td>2015</td>
<td>$220M</td>
<td>NLD</td>
<td>Created a pathway to Bermuda</td>
</tr>
<tr>
<td>2 undisclosed and unrelated indexed plans</td>
<td>SunLife</td>
<td>2015</td>
<td>$530M</td>
<td>CAN</td>
<td>Coupled buy-ins</td>
</tr>
<tr>
<td>Undisclosed</td>
<td>Zurich, Pacific Life Re</td>
<td>2015</td>
<td>$135M</td>
<td>UK</td>
<td>Opens smaller market for longevity risk transfer</td>
</tr>
<tr>
<td>MNOPF</td>
<td>Legal &amp; General</td>
<td>2009</td>
<td>$800M</td>
<td>UK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Legal &amp; General</td>
<td>2010</td>
<td>$155M</td>
<td>UK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rothesay Life</td>
<td>2012</td>
<td>$1B</td>
<td>UK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rothesay Life, Legal &amp; General</td>
<td>2014</td>
<td>$2.2B</td>
<td>UK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pacific Life Re</td>
<td>2015</td>
<td>$2.3B</td>
<td>UK</td>
<td></td>
</tr>
</tbody>
</table>

Source: Prudential analysis of publicly announced transactions.
The BT Pension Scheme Completed the Largest and Most Innovative Longevity Risk Transfer in the Market

- Largest ever completed at £16 billion ($27.7 billion)
- First to use an insurance captive owned by the pension fund
- Allows BTPS to immunize 25% of its longevity risk, combining a fixed and known future liability with the Scheme’s own world-class asset management
- Allows BTPS to pay for its de-risking over time and shed an unrewarded risk
- Provides a proven approach for the world’s largest pension funds to manage longevity risk
# U.K. Pension Scheme Longevity Risk Transfers Since 2009

<table>
<thead>
<tr>
<th>Organization</th>
<th>Date</th>
<th>Approx. Value of Deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Babcock</td>
<td>3Q 2009</td>
<td>£1.2bn</td>
</tr>
<tr>
<td>RSA Insurance</td>
<td>3Q 2009</td>
<td>£1.9bn</td>
</tr>
<tr>
<td>Berkshire</td>
<td>4Q 2009</td>
<td>£1bn</td>
</tr>
<tr>
<td>BMW</td>
<td>1Q 2010</td>
<td>£3bn</td>
</tr>
<tr>
<td>Pall</td>
<td>1Q 2011</td>
<td>£0.1bn</td>
</tr>
<tr>
<td>ITV</td>
<td>3Q 2011</td>
<td>£1.7bn</td>
</tr>
<tr>
<td>Rolls-Royce</td>
<td>4Q 2011</td>
<td>£3bn</td>
</tr>
<tr>
<td>British Airways</td>
<td>4Q 2011</td>
<td>£1.3bn</td>
</tr>
<tr>
<td>Pilkington</td>
<td>4Q 2011</td>
<td>£1bn</td>
</tr>
<tr>
<td>AkzoNobel</td>
<td>2Q 2012</td>
<td>£1.4bn</td>
</tr>
<tr>
<td>LV=</td>
<td>4Q 2012</td>
<td>£0.8bn</td>
</tr>
<tr>
<td>BAE Systems</td>
<td>1Q 2013</td>
<td>£3.2bn</td>
</tr>
<tr>
<td>Bentley</td>
<td>2Q 2013</td>
<td>£0.4bn</td>
</tr>
<tr>
<td>Carillion</td>
<td>4Q 2013</td>
<td>£1bn</td>
</tr>
<tr>
<td>Astra Zeneca</td>
<td>4Q 2013</td>
<td>£2.5bn</td>
</tr>
<tr>
<td>BAE Systems</td>
<td>4Q 2013</td>
<td>£1.7bn</td>
</tr>
<tr>
<td>Aviva</td>
<td>1Q 2014</td>
<td>£5bn</td>
</tr>
<tr>
<td>BT</td>
<td>2Q 2014</td>
<td>£16bn</td>
</tr>
<tr>
<td>PGL</td>
<td>3Q 2014</td>
<td>£0.9bn</td>
</tr>
<tr>
<td>MNOPF</td>
<td>4Q 2014</td>
<td>£1.5bn</td>
</tr>
<tr>
<td>Scottish Power</td>
<td>4Q 2014</td>
<td>£2bn</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organization</th>
<th>Date</th>
<th>Appro. Value of Deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>AXA UK</td>
<td>3Q 2015</td>
<td>£2.8bn</td>
</tr>
<tr>
<td>Heineken</td>
<td>3Q 2015</td>
<td>£2.4bn</td>
</tr>
<tr>
<td>RAC (2003) Pension Scheme</td>
<td>4Q 2015</td>
<td>£0.6bn</td>
</tr>
<tr>
<td>Unnamed</td>
<td>4Q 2015</td>
<td>£0.1bn</td>
</tr>
<tr>
<td>Pirelli</td>
<td>3Q 2016</td>
<td>£0.6bn</td>
</tr>
<tr>
<td>Electric Supply (Manweb)</td>
<td>3Q 2016</td>
<td>£1.0bn</td>
</tr>
<tr>
<td>Unnamed</td>
<td>4Q 2016</td>
<td>£0.05bn</td>
</tr>
<tr>
<td>Unnamed</td>
<td>4Q 2016</td>
<td>£0.9bn</td>
</tr>
<tr>
<td>Unnamed</td>
<td>1Q 2017</td>
<td>£0.3bn</td>
</tr>
</tbody>
</table>

## Structure

- Fully intermediated by bank or insurer
- Limited recourse intermediary
- Captive

U.K. Pension Scheme Longevity Risk Transfers Since 2009

Since 2014, the market has been dominated by captives and limited recourse intermediaries

Through a Decade of Innovation We Have Developed Many Solutions, But Our Work is Not Yet Complete

**DEVELOPED**
- Fully intermediated
- Limited recourse
- Captive
- Solutions for jumbo and small
- Tail risk protection
- LDI
- Absolute return
- Private Fixed Income
- Scaled market
- Solutions for jumbo, underfunded, and overfunded
- Split transactions, plan terminations
- Phased transactions
- Global de-riskers

**DB PENSION DE-RISKING CONTINUUM**
- Longevity Insurance
- Asset Only Solutions
- Full Annuity Buy-in/Buy-out

**TO BE DEVELOPED**
- Deferred annuitant solutions
- Efficiency and standardization
- Syndication
- Risky asset solutions
- Deferred annuitant solutions
- Syndication and sidecars

**MORE COUNTRIES**
## Longevity Risk Transfer in Other Markets

<table>
<thead>
<tr>
<th>Cedant</th>
<th>Risk Taker</th>
<th>Country</th>
<th>Size</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEGON</td>
<td>Capital Markets and SCOR (thru Société Générale)</td>
<td>NLD</td>
<td>EUR 1.4b</td>
<td>Dec. 2013</td>
</tr>
<tr>
<td>Delta Lloyd</td>
<td>RGA</td>
<td>NLD</td>
<td>EUR 12b</td>
<td>Aug. 2014</td>
</tr>
<tr>
<td>AXA France</td>
<td>Hannover Re</td>
<td>FRA</td>
<td>EUR 750m</td>
<td>Aug. 2014</td>
</tr>
<tr>
<td>Delta Lloyd</td>
<td>RGA</td>
<td>NLD</td>
<td>EUR 12b</td>
<td>June 2015</td>
</tr>
<tr>
<td>AEGON</td>
<td>Canada Life Re</td>
<td>NLD</td>
<td>EUR 6b</td>
<td>July 2015</td>
</tr>
<tr>
<td>AXA France</td>
<td>RGA</td>
<td>FRA</td>
<td>EUR 1.3b</td>
<td>Nov. 2016</td>
</tr>
</tbody>
</table>

These Dutch transactions provide “out-of-the-money” tail risk protection against future longevity improvements.

Reinsurance sidecar

A financial structure established to allow investors (often external or third-party) to take on the risk and benefit from the return of specific books of insurance or reinsurance business.

Typically set up by existing re/insurers who are looking to either partner with another source of capital or set up an entity to enable them to accept capital from third-party investors.

Kinds of sidecar investors:
- Sovereign wealth funds
- ILS hedge funds
- Private equity
- Specialty reinsurers
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0307721-00001-00
Offshore Reinsurance

• Definition
  • Reinsurance ceded to a non-US/Canadian reinsurer, generally one domiciled in a jurisdiction having a different regulatory and/or tax regime
  • Examples include Bermuda, Cayman Islands, Barbados, Ireland

• Not to be confused with “captives”
Advantages for the Reinsurer

- Ease of setting up
- Flexible capital requirements based on business plan rather than rigid rules
- Accounting under GAAP or IAS
- Potential for lower overall tax burden
## Comparison (US vs. Offshore)

<table>
<thead>
<tr>
<th></th>
<th>Domestic</th>
<th>Offshore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set-up time</td>
<td>Months</td>
<td>Weeks</td>
</tr>
<tr>
<td>Capital Requirements</td>
<td>Rigid (NAIC RBC formula)</td>
<td>Flexible (based on business plan)</td>
</tr>
<tr>
<td>Accounting</td>
<td>NAIC statutory</td>
<td>Generally IAS, US GAAP, Canadian GAAP, or other recognized system (consistently applied)</td>
</tr>
<tr>
<td>Local Tax Burden</td>
<td>Corporate tax rate</td>
<td>Little or no local burden</td>
</tr>
</tbody>
</table>
Potential Benefits for Ceding Insurers

- Possibility for better pricing
  - Capital efficiencies
  - Tax efficiencies
  - Global investment strategies

- Generally collateralized
  - Trust account
  - Letter of credit
Example

• Assume:
  • Spread product with 2% net spread
  • Domestic tax rate 35%
  • Offshore reinsurer reimburses 1% FET
  • 5-year amortization of FET **
  • Domestic capital requirement of 10%
  • Offshore requirement 8%
  • $100 million volume
    • ** Annual FET expense = $1 million divided by 5 years
Example (cont’d)

- Missing from the analysis
  - Cost of trust account or
  - Cost of letter of credit
  - Local taxes in offshore domicile (if any)
  - Cost of capital for initial ceding commissions (if any)
  - Cost of capital for over-collateralization (e.g. holding 102% of stat. reserves)
**Example (cont’d)**

<table>
<thead>
<tr>
<th></th>
<th>Domestic</th>
<th>Offshore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain P/T</td>
<td>$2.00</td>
<td>$2.00</td>
</tr>
<tr>
<td>Taxes</td>
<td>0.70</td>
<td>0.20</td>
</tr>
<tr>
<td>Gain A/T</td>
<td>1.30</td>
<td>1.80</td>
</tr>
<tr>
<td>Req’d Capital</td>
<td>10%</td>
<td>8%</td>
</tr>
<tr>
<td>A/T R.O.C.</td>
<td>13.0%</td>
<td>22.5%</td>
</tr>
</tbody>
</table>
Collateral

- Offshore reinsurers will generally have to post collateral for ceding insurer to take reserve credit (exception: “Certified” reinsurers)
- Trust accounts with qualified institution
- Letters of credit from approved banks
- Funds held by ceding insurer
Certified Reinsurers

- Historically, 100% collateral requirement imposed on cessions to unauthorized reinsurers
- Revised credit for reinsurance model act reduced collateral requirements for certain reinsurers
- Must be in a qualified jurisdiction (Bermuda, France, Germany, Ireland, Japan, Switzerland, UK)
- Reduction in collateral based on financial strength rating (e.g. Moody’s Aaa 0% collateral; Aa 10%, A1 or A2 20%; A3 50%; Baa 75%; lower 100%)
• Operational issues for the ceding insurer
  • Payment of Federal excise tax (if applicable)
  • Monitoring of the collateral
    • Amounts
    • Timing of true-ups
  • Travel to negotiate deal terms
SOCIETY OF ACTUARIES

Reinsurance Arbitration

HUGH MCCORMICK
MICHELE JACOBSON
DON SOLOW

Date: August 14-15, 2017
Active participation in the Society of Actuaries is an important aspect of membership. While the positive contributions of professional societies and associations are well-recognized and encouraged, association activities are vulnerable to close antitrust scrutiny. By their very nature, associations bring together industry competitors and other market participants.

The United States antitrust laws aim to protect consumers by preserving the free economy and prohibiting anti-competitive business practices; they promote competition. There are both state and federal antitrust laws, although state antitrust laws closely follow federal law. The Sherman Act, is the primary U.S. antitrust law pertaining to association activities. The Sherman Act prohibits every contract, combination or conspiracy that places an unreasonable restraint on trade. There are, however, some activities that are illegal under all circumstances, such as price fixing, market allocation and collusive bidding.

There is no safe harbor under the antitrust law for professional association activities. Therefore, association meeting participants should refrain from discussing any activity that could potentially be construed as having an anti-competitive effect. Discussions relating to product or service pricing, market allocations, membership restrictions, product standardization or other conditions on trade could arguably be perceived as a restraint on trade and may expose the SOA and its members to antitrust enforcement procedures.

While participating in all SOA in person meetings, webinars, teleconferences or side discussions, you should avoid discussing competitively sensitive information with competitors and follow these guidelines:

- Do not discuss prices for services or products or anything else that might affect prices
- Do not discuss what you or other entities plan to do in a particular geographic or product markets or with particular customers.
- Do not speak on behalf of the SOA or any of its committees unless specifically authorized to do so.
- Do leave a meeting where any anticompetitive pricing or market allocation discussion occurs.
- Do alert SOA staff and/or legal counsel to any concerning discussions
- Do consult with legal counsel before raising any matter or making a statement that may involve competitively sensitive information.

Adherence to these guidelines involves not only avoidance of antitrust violations, but avoidance of behavior which might be so construed. These guidelines only provide an overview of prohibited activities. SOA legal counsel reviews meeting agenda and materials as deemed appropriate and any discussion that departs from the formal agenda should be scrutinized carefully. Antitrust compliance is everyone’s responsibility; however, please seek legal counsel if you have any questions or concerns.
Presentation Disclaimer

Presentations are intended for educational purposes only and do not replace independent professional judgment. Statements of fact and opinions expressed are those of the participants individually and, unless expressly stated to the contrary, are not the opinion or position of the Society of Actuaries, its cosponsors or its committees. The Society of Actuaries does not endorse or approve, and assumes no responsibility for, the content, accuracy or completeness of the information presented. Attendees should note that the sessions are audio-recorded and may be published in various media, including print, audio and video formats without further notice.
Dramatis Personae

• The Parties:
  • Gotham Life Insurance Company ("the life insurer that never sleeps")
  • Big Apple Reinsurance Company ("if your underwriting can make it here, it can make it anywhere")

• Arbitrator:
  • Don Solow, President, Vista Life & Casualty Reinsurance Company

• Counsel:
  • Michele Jacobson, Partner, Stroock & Stroock & Lavan LLP, representing Gotham Life
  • Hugh McCormick, Partner, Duane Morris LLP, representing Big Apple Re
The Beginning--2004

- Gotham Life approaches Big Apple Re seeking a quote for reinsurance on its UL business, proposing a 80% quota share.
  - It seeks automatic binding limits of $10 million per life.
  - It provides the following pertinent information:
    - Gotham Life historically has retained the majority of its UL business but cedes some facultative risk excess of its corporate retention limits (including to Big Apple Re).
    - Gotham Life states that the reason for seeking reinsurance is to “take advantage of the favorable reinsurance market.”
The Beginning

• Four underwriting classes:
  • Preferred Plus – 20%
  • Preferred – 30%
  • Standard – 40%
  • Substandard – 10%.

• Gotham Life uses ABC Manual to underwrite.
  • Most recent mortality study shows similar historical distribution by underwriting class.
  • Big Apple Re does new business audit, including Gotham Life’s systems. Big Apple Re finds Gotham Life to be materially in compliance with ABC Manual.
  • Gotham Life states that it expects new business performance to be consistent with existing business.
The Beginning

• Big Apple Re provides a quote for YRT reinsurance on up to a 80% share of the business, with banded rates as a % of an industry table for each class.

• Gotham Life accepts Big Apple Re’s quote.
  • Gotham Life provides draft Treaty.
  • Big Apple Re provides comments, including list of required data elements for reporting.
  • Parties execute treaty, to be effective 1/1/2005.
Change in Underwriting Manual

• Gotham Life’s agent force advises that ABC Manual is “overly conservative,” suggest switch to XYZ Manual to be more competitive.
  • “Very similar in approach.”
  • Leaves more flexibility to underwriters in rating risks.
  • It concludes that XYZ Manual will allow Gotham Life “to be more competitive in the marketplace without materially compromising underwriting quality.”

• Gotham Life decides to switch to XYZ Manual effective 1/1/2007.
  • It does not inform Big Apple Re of the switch.
  • It does not believe change would have a material impact on the business.
Change in Underwriting Manual

• In 2009 Big Apple Re does second new business audit, learns of switch to XYZ Manual.
  • Gotham Life advises that switch “has enabled us to compete more effectively without compromising our standards.”
  • Big Apple Re finds Gotham Life to be materially in compliance with XYZ Manual, tells Gotham Life that it will be “monitoring the situation closely.”

• By 2010 actual distribution varies significantly from business at inception:
  • Preferred Plus – 20% to 30%
  • Preferred – 30% to 40%
  • Standard – 40% to 25%
  • Substandard – 10% to 5%.

Contestable Claim

• In 2010 Gotham Life issued $5 million policy on life of Amelia Earhart.
  • Policy is within auto-binding limits so ceded to Treaty automatically.
  • Policy application answered “no” to question regarding whether Amelia had pilot’s license or plans to fly private aircraft.
  • Amelia flew private aircraft periodically.
  • Amelia’s insurance agent was family friend and knew reason for policy purchase, yet still checked “no” on application.
  • Had “yes” been checked, there would have been significant additional premium and a rider, as base policy contained standard exclusion for death via piloting private aircraft.
Contestable Claim

• In 2011 Amelia dies while flying private plane, within contestable period of policy.
  • Following investigation of Claim, Gotham Life decided not to contest coverage even though policy was within the contestable period.
  • No evidence Amelia was personally responsible for misrepresentation.
  • Gotham Life didn’t want bad publicity it feared would result from contesting coverage.
  • Gotham Life did not consult with Big Apple Re prior to paying claim, and simply submitted the usual claim paperwork.
Problems Emerge

• In 2012 the issues begin to come to light.
  • After a small profit/break-even in the first few years, the Treaty’s performance steadily turns negative.
• In 2013 Big Apple Re conducts an audit.
• Determines that business mix differs significantly from that at inception.
  • Primary reasons for change in mix of business was switch from ABC Manual to XYZ Manual, and aggressive marketing.
    • Some business previously classified as “Preferred” now was able to be classified as “Preferred Plus.”
    • Some business previously classified as “Substandard” now was able to be classified as “Standard.”
• As part of audit, Big Apple Re reviews claims files for all claims for which Big Apple Re’s share is $1 million or more.
  • Big Apple Re’s share of the Amelia claim = $4 million (80% quota share of claim).
Dispute Arises

• Big Apple Re terminates the Treaty for new business effective 1/1/2014.

• Big Apple Re demands that Gotham Life:
  • Pay additional of premium from treaty inception, plus interest, based on changes in distribution of business by classification.
  • Refund $4 million paid for the claim within the contestable period.

• In 2015 the parties have numerous discussions in an effort to resolve their differences.
Arbitration

• In 2016 Gotham Life demands arbitration, seeking:
  • Declaration that Big Apple Re is not owed additional premiums based on change in underwriting manual.
  • Declaration that Gotham Life is not obligated to contest every death claim, and thus Amelia Earhart claim is covered by reinsurance under the “follow the fortunes” provisions of the treaty.

• Big Apple Re counterclaims, seeking:
  • Rescission of the Treaty effective January 1, 2007 for Gotham Life’s change in the manual.
  • Alternatively, repricing of the Treaty from inception based on Gotham Life’s materially misleading representation about the underwriting class distribution of the business to be reinsured (alleged to be an additional 20% of total premium), plus interest.
  • Reimbursement of $4 million previously paid for Amelia Earhart claim that Gotham Life should have contested.
Results of Discovery

• During discovery in the arbitration, the following additional facts are revealed:
  • The statute of limitations is five years from the time each party had the right to make a claim against the other.
  • The persons at both parties who negotiated the Treaty are not available, so there is no additional evidence of what was discussed during placement.
  • Big Apple Re wrote other business that was underwritten using the XYZ Manual.
    • There is no consistent pattern of Big Apple Re charging higher rates for business written using the XYZ Manual.
  • The parties’ experts disagree about the impact of the change in underwriting class business mix.
  • Big Apple Re’s expert says that, based on Big Apple Re’s pricing methodology, Big Apple Re would have quoted rates 20% higher had Big Apple Re used the distribution percentages that actually were ceded.
  • Gotham Life’s expert says that competitive pressure would have kept Big Apple Re’s rates the same even had the distribution been different.
Treaty Clauses

• Article I – Definitions: “We,” “Us” and “Our” refers to Gotham Life. “You” and “Your” refers to Big Apple Re.

• Article IV – Reinsurance Premiums: The premium rates for life insurance and other benefits reinsured are set forth in the schedules in Exhibit II. The rates will be applied to the net amount at risk.

• Article VII – Reporting: Within 30 days following the close of each calendar quarter, We agree to provide You with complete and accurate data and reports in the form specified in Exhibit II. We will provide You with notice of material changes to (i) Our Underwriting Guidelines, (ii) Our Standard Claims Guidelines and Practices, and (iii) Our Policy form or product specifications.
Treaty Clauses

• Article X – Contestable Claims: We will notify You of Our intent to contest insurance reinsured under this Agreement or to assert defenses to a claim for such insurance. If the contest results in the reduction of Our liability, You will share in this reduction. If You decline to participate in the contest, You must pay Us the full amount of Your share of the reinsurance, and You will not share in any subsequent reduction in liability.
Treaty Clauses

• Article XIV – Arbitration: This Agreement shall be considered an honorable undertaking, and the arbitrators shall consider the customs and practices of the life insurance and life reinsurance industry, including the principles that the parties will conduct their relationship based on utmost good faith and that the Big Apple Re will follow the fortunes of the Gotham Life, in reaching a result.

• Article XXI – Error and Omissions: If there is an unintentional oversight or misunderstanding in the administration of this Agreement, whether by Us or by You, it must be corrected promptly after the oversight or misunderstanding is first discovered. Both parties will be restored, to the extent possible, to the position each would have occupied had the oversight or misunderstanding not occurred.
Questions for Audience

Q: Is Big Apple Re entitled to rescind the Treaty effective 1/1/2007 based on Gotham Life’s switch to the XYZ Manual?

- Yes, in full
- Yes, in part
- No
- Another remedy is warranted
Questions for Audience

Q: Is Gotham Life required to pay additional premiums based on distribution of the business to be reinsured?

- Yes, in full
- Yes, in part
- No
- Another remedy is warranted
Questions for Audience

Q: Is Gotham Life required to pay additional premiums based on different underwriting?

- Yes, in full
- Yes, in part
- No
- Another remedy is warranted
Questions for Audience

Q: Is Big Apple Re required to cover the Amelia Earhart policy?

- Yes, in full
- Yes, in part
- No
- Another remedy is warranted