Capital Adequacy: Policies and Testing
Association of Governmental Risk Insurance Pools (AGRIp)

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Speakers

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Agenda

- Introduction to Target Capital Concepts
- Case Study 1 – PDRMA
- Case Study 2 – WMMIC
- Case Study 3 – NYSIR
- Sample Capital Model Output
- Developing a Target Capital Policy
- Closing Remarks and Questions
Introduction to Target Capital Concepts
Pools manage risk by creating and holding capital

Amount of Capital

- **Core Capital**
  Required to meet
  - Regulatory minimums
  - Rating agency minimums
  - Any other minimums

- **Buffer Capital**
  Sufficient to protect against most short-term fluctuations

Target capital range

If capital falls below target:
- Increase income (premium, investment)
- Reduce expenses

If capital exceeds target:
- Return capital
- Reduce premium
- Invest in member programs (loss control, safety training)
There are a number of ways to evaluate capital adequacy

- Understanding pools’ leverage position
- Peer analysis of Best Capital Adequacy Ratio (BCAR)
- Confidence level analysis of pools’ reserves
- Stress Testing
- Capital Modeling
Financial ratios help you to understand a pool’s leverage position

There are three main categories of ratios

| Leverage Ratios | - Measure a pool’s operating stability and the ability to write new business  
|                 |   - Premium to Capital ratio  
|                 |   - Reserve to capital ratio  
|                 |   - Net leverage ratio ([premiums and reserves] to capital ratio) |
| Profitability Ratios | - Measure results of operations |
| Liquidity Ratios | - Measure the ability to meet short-term claim obligations |
Strategic value of capital modeling
The case for “stochastic”

- Projections help management understand:
  - Future impacts on capital
  - Capital relative to a target level over time
- “Stochastic” modeling helps to picture the range of outcomes
  - Potential variability of an insurance program
    - Excludes extreme outliers
  - The key drivers of financial volatility
  - Where various specific scenarios fit within the range
  - Explicitly consider risk tolerance thresholds
- Multiple-year time horizon used to illustrate the dynamic impact on results over the medium to long-term
Case Study # 1

Brett Davis

Park District Risk Management Agency
Illinois Park and Recreation Agencies
Started in 1984
Property/Casualty and Work Comp.
Health
158 P/C Members
$20 Million Annual P/C contribution
Rate Stabilization.
Why Capital Modeling?

- Developed net position benchmarks in 2012
- Limited testing at that time
- Risk tolerance discussion with Board
Benchmarks

- 95th percent confidence level
- BCAR 75th percentile of A rated peer group
- Premium to Surplus using peer group public entity midpoint
- BCAR 75th percentile of peer group of risk pools
Policy

- Amounts that exceed all four benchmarks are excess net position.
- Net position falls below 50th percentile of either BCAR, below 75th percentile confidence level, or premium to surplus exceeds 2:1 ratio, the Finance Committee will recommend action.
- 12/31/2018 data drives 2020 budget.
Start of Process

- Board support
- Identify alternative scenarios
  - No equities
  - Max. amount of equities
  - Double SIR with corresponding decrease in reinsurance premium
  - Double SIR with no decrease in reinsurance premium
Next steps

- Communicate
  - Finance Committee
  - Board
  - Membership
- Another data point for decision making
- Annual update
Case Study #2
- WMMIC

Danielle Rogacki
Who – Wisconsin Municipal Mutual Insurance Company

• Municipal Mutual in Wisconsin
  • Liability insurance for Counties/Cities/Special Use Districts for over 30 years
  • WC TPA Services and Excess WC insurance

• Board Governance
  • 7 board members
  • Active participation by all entities

• Members have a capital investment (equity) of at least $500K
• WMMIC has never had a member leave
Why surplus modeling?

• Understanding our net surplus position
  • Too much surplus?
  • Environment
  • Framework and guidance
  • Plans to invest $3 million in a start up property insurance company
  • AmBest Rating
How our story began...

- Created a net surplus policy (2014/2015)
- Target Surplus benchmark Analysis
  - Completed by WillisTowersWatson (WTW)
  - Comparison by Benchmark Surplus Levels
  - BCAR Ratios by Benchmark Group
- Developed the board approved Net Surplus Policy indicating that the minimum level of surplus needs to be in excess of the following benchmarks
  - Premium to surplus ratio
  - Confidence Level Percentage
  - Best Capital Adequacy Ratio (BCAR)
How - Our first Scenario Analysis

- Management with WTW assistance conducted a scenario analysis (stress test) in 2016
- Developed a set of initial assumptions – Base Scenario
  - Premium increase of 4% each year
  - No change in member SIRs or reinsurance structure
  - No change in reinsurance cost
  - Distribution investment assets will be consistent as of 12/31/15
  - Consistent operating and capital dividend
  - Other accounts stay consistent on financial
How – Our first scenario analysis

- Scenario 2: Large loss in 2017
- Scenario 3: New member in 2018
- Scenario 4: Purchase Building in 2019
- Scenario 5: Scenarios 2 through 4 combined
- Scenario 6: Scenarios 2 through 4 as well as an additional large loss each year and a loss ratio 10% higher than expected
Scenario Results

![Surplus by Scenario Graph](image)

As of Date
- Scenario 1
- Scenario 2
- Scenario 3
- Scenario 4
- Scenario 5
- Scenario 6
What WMMIC has learned

- The dividends while not guaranteed, did have an impact on surplus.
- The projected impact of a large losses on our surplus
- Developed more conservative reserving guidelines
- Net surplus position as viewed by rating agencies
- This is one of many tools in our toolbox to manage the operations and assist the board in governance
What is next?

• Strategic Planning in 2020
  • Another stress test in 2020 with strategic planning
• Review of our net surplus policy
• Review of our dividend policy
• Review of investment policy
• Rating options
Case Study #3
New York Schools Insurance Reciprocal
Who? New York Schools Insurance Reciprocal

• Started writing business in 1989

• Property/Casualty

• Regulated like an insurance company
  • Quarterly financial submissions to the state
  • Insurance department audits
  • Must file forms, rates, rating plans

• 354 subscribers

• Have significant hurricane exposure on Long Island
Case Study #3
New York Schools Insurance Reciprocal

- Starting point
  - Annual pro forma modeling for the Board
  - The graphs are pretty but what do you do with this information?

- A.M. Best
  - Catastrophe focus
  - Enterprise risk management (ERM)
  - Stochastic modeling with tail focus

- Board buy-in

- Service provider assistance (e.g., broker, actuary, auditor)

- Assigning responsibilities
  - Board committees
  - Monitoring responsibility
  - Who creates action options when thresholds are breached

- Review of policies and thresholds at least annually
Sample Capital Model Output
Stochastic analysis shows the complete distribution of possible outcomes

- We project the full distribution of potential balance sheet outcomes (the dark gray shaded area)
  - Light gray area represents the 25th to 75th percentile outcomes (more likely)
    - The darker gray area represents less likely outcomes
  - Dotted line represents the mean of the simulations

- Distribution is based on risk profile of assets and liabilities
  - Volatility parameters for each financial statement entry are determined based on actual pool history, and industry benchmarks

![Capital at Year-end](diagram)
Impact on model assumptions and key benefits of scenario testing

- Primary risks facing a pool are articulated

- Based on discussions, scenarios are generated to reflect the current and projected operating environment:
  - Provides realistic concrete events that are easy to follow and well suited for the Board
  - Enables strong scenario analysis to compare against target benchmarks
  - Results can be used to establish tolerance thresholds

Forward estimates are aligned with how we assess risk
We can then describe specific scenarios within the stochastic range

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Business as usual</th>
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<tbody>
<tr>
<td></td>
<td>Premium growth steady with stable price adequacy</td>
</tr>
<tr>
<td></td>
<td>No changes in external influences (e.g., competition, reinsurance markets, regulation, etc.)</td>
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<tr>
<th>Scenario 2</th>
<th>Soft primary market</th>
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<td></td>
<td>New competitors pricing aggressively</td>
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<th>Scenario 3</th>
<th>Hard reinsurance market</th>
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<td></td>
<td>May be due to national or global catastrophes</td>
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<td>Inability to pass all of the increase to members in a single year – inadequate rates</td>
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<th>Scenario 4</th>
<th>Premium Growth (hard primary market)</th>
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<tr>
<td></td>
<td>Competition leaves market</td>
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<td></td>
<td>Can still price risks adequately</td>
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Each line superimposed on the chart shows where within the distribution each of the scenarios falls.
Developing a Target Capital Policy
A target capital policy should be customized for a pool

- Examples of target capital goals and policies should articulate management and Board goals - these could include:
  - “A.M. Best rating of A”
  - “Achieve 95% confidence level of reserves”
  - “Annual rate increase of less than 2%”
- Quantifiable process for determining progress against target capital goals
- Time frame for re-evaluation of target capital
Closing Remarks and Questions
Recap

- Addressed Concepts for Capital Targets
  - Pools manage risk by creating and holding capital
  - There are a number of ways to evaluate capital adequacy
  - Financial ratios help you to understand a pool’s leverage position
  - Strategic value of capital modeling

- Explored three pool case studies
  - PDRMA
  - WMMIC
  - NYSIR

- Examined a Sample Capital Model Output
  - Stochastic model
  - Model is impacted by assumptions
  - Evaluate confidence level placement of scenarios

- Tips for Developing a Target Capital Policy
  - Customized to your pool
  - Examples of goals
  - Timeline for evaluation

- Remember the AGRiP Advisory Standards
  - AGRiP’s best practices for the pooling industry help self-reflect and ensure operations, governance, and more. These are being provided for the local governments served by the pools
  - In this context, “Governance Standard: Fiduciary and Financial Solvency” may apply
Thank you for joining us today

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