Current issues in general insurance
P. Claude Lefebvre, FCAS, FCIA, MAAA

Capital – Reinsurance Strategy Under Solvency II
12 May 2011

Agenda

• Basics and Objectives of Solvency II
• Standard Formula or Internal Model – QIS5 Results
• Reinsurance and Capital Management
• Counterparty Risk
• Final Remarks
Basics and Objectives of Solvency II

Capital Requirements
- Internal Model
- Standard Formula (QIS5)

Solvency II – The Basics

Governance and Risk Management

Transparency and Disclosure

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Solvency II
Objectives and The Realities

• An ambitious undertaking
• Politically charged
• IFRS and Basel II
• Widely criticised
• Significant undertaking
• Work in progress

Solvency II – Capital and Risk Management

• Pillar 1 – Focus on underwriting and counterparty risk

<table>
<thead>
<tr>
<th>Standard Model</th>
<th>Internal Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple</td>
<td>Partial</td>
</tr>
<tr>
<td>Advanced</td>
<td>Full</td>
</tr>
</tbody>
</table>

• Pillar 2 – Implement capital management framework
# QIS5 Results

## Overall Surplus and Requirements – Solo Entity Level

<table>
<thead>
<tr>
<th></th>
<th>Solvency I</th>
<th>SCR</th>
<th>MCR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Surplus</strong></td>
<td>476.3</td>
<td>354.6</td>
<td>676.0</td>
</tr>
<tr>
<td><strong>Coverage Ratio</strong></td>
<td>310%</td>
<td>165%</td>
<td>466%</td>
</tr>
</tbody>
</table>

**Surplus**: Eligible Own Funds in excess of Capital Requirements

**Coverage Ratio**: Eligible own funds / Capital Requirement
Solvency II – QIS5 Study

Distribution of SCR coverage

- More than 400%: 13.9%
- 350% to 400%: 5.3%
- 300% to 350%: 7.4%
- 250% to 300%: 9.5%
- 200% to 250%: 12.2%
- 150% to 200%: 17.1%
- 120% to 150%: 11.4%
- 100% to 120%: 8.3%
- 75% to 100%: 6.1%
- Less than 75%: 8.8%

15% of companies do not meet SCR

Solvency II – QIS5 Study

No apparent need for a great deal of additional capital at this time
QIS5 Results
SCR – Non-Life on Solo Entity Level

Diversified BSCR – Non-life undertakings (solo)

- Market: 32.8%
- Counterparty: 7%
- Life: 7%
- Health: 62.4%
- Non-Life: 0.4%
- Intangible: 100%
- BSCR: 100%

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QIS5 Results
Non-Life Underwriting Risk on Solo Entity Level

- Premium & Reserve: 76%
- Catastrophe: 50%
- Lapse: 1%
- Diversification: 20%
- Gross Non-Life Underwriting Risk: 100%

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QIS5 Results
Non-Life Cat Risk on Solo Entity Level

Reinsurance and Capital Management
Solvency II – Impact on Reinsurance Market

Potential Benefits

• Greater transparency
• Convergence in reporting
• Improved reinsurance security
• Stronger insurance-linked securities (ILS) market
• Transitional periods should limit disruption

Solvency II – Impact on Reinsurance Market

Drawbacks and Risks

• Increased regulatory burden
• Potential increase in consolidation
• More intense and volatile U/W cycles
Unintended Effects of Solvency II
Potential Impact on the U/W Cycle

Solvency II
Pitfalls of Managing Capital Using VaR Measures

<table>
<thead>
<tr>
<th>Portfolio</th>
<th>VaR</th>
<th>TVaR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>$10.0 M</td>
<td>$10.7 M</td>
</tr>
<tr>
<td>Green</td>
<td>$10.0 M</td>
<td>$11.4 M</td>
</tr>
<tr>
<td>Yellow</td>
<td>$10.0 M</td>
<td>$13.4 M</td>
</tr>
</tbody>
</table>

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Solvency II – Impact on Reinsurance Market

• Higher capital requirements
  – Standard formula
  – Internal models
  – Onerous risk charges

• Reinsurers expected to benefit
  – Inability to raise capital
  – Purchasing of more reinsurance
  – Inexpensive vehicle
  – Increased revenue

Solvency II
Reducing Risk (and Required Capital Levels)

• Reinsurance Solutions
  – Proportional
  – Non-Proportional
  – Aggregate or Stop Loss

• Alternative Risk Mitigation Techniques

• Diversification and Divestitures
  – New lines of business
  – Mergers and Acquisitions
  – Exiting lines of business
Solvency II – Reinsurance Solutions
Standard Formula vs. Internal Model

- Proportional Treaties
- Excess of Loss Treaties
- Aggregate Covers or Stop Loss

Reducing Capital Charges
Ceding Commission Example

<table>
<thead>
<tr>
<th>Gross Assumptions</th>
<th>Loss Ratio</th>
<th>Expense Ratio</th>
<th>Combined Ratio</th>
<th>Ceding Commission</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>75%</td>
<td>20%</td>
<td>95%</td>
<td>30%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Net Loss Ratio</th>
<th>Net Expense Ratio</th>
<th>Net Combined Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>75%</td>
<td>75%</td>
<td>85%</td>
</tr>
<tr>
<td>20%</td>
<td>10%</td>
<td>75%</td>
</tr>
</tbody>
</table>

-20%

<table>
<thead>
<tr>
<th>Cession Percentage</th>
<th>Maximum Breakeven Net Loss Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>80%</td>
</tr>
<tr>
<td>50%</td>
<td>90%</td>
</tr>
<tr>
<td>75%</td>
<td>120%</td>
</tr>
</tbody>
</table>

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Reinsurance and Counterparty Risk

Reinsurance Usage
Understanding Counterparty Risk

- Core component of Solvency II
- Reinsurance creates counterparty risk
- Offsetting capital charges
- Proposed method uses financial ratings
- Complex approach
Final Remarks

Solvency II
Challenges

- Soft market
- Recent Cat frequency
- Weak investment returns
- Recession and inflation
- Implementation costs
- Resource constraints
Solvency II
Changing the Landscape of Reinsurance

Cui bono?

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