Solvency Projections: What’s the point unless you get some value from the results?

Raymond Bennett and Stefan Strydom
Agenda

1. Why solvency projections?

2. A model office approach and case study

3. Applying the model in a SAM environment: life insurance

4. Extending the approach to short term insurance

5. Advantages, limitations and future developments
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Why solvency projections?

“Underlying the ORSA should be the assumption that the insurer will continue as a going concern for the foreseeable future. This assumption should be validated by the assessment.”

“The insurer should assess its ability to continue in business and assess the adequacy and quality of economic capital over a longer time horizon (typically 3 – 5 years) than used to determine regulatory capital requirements. This time horizon should correspond with the business planning time horizon.

“…quantitative assessment cover the insurer (group)’s own (economic) bases…include an assessment of the regulatory capital and own funds over the business planning period. The purpose…assess continuous compliance. The assessment of solvency should cover at least the SCR, MCR and Own Funds over the business planning period.”

SEE SAM POSITION PAPERS 34 AND 107 FOR FURTHER DETAILS.
What approaches are available?

**Factor based**
- Factors or formulas used to estimate the change in assets, liabilities and capital requirements
- Factors can be applied at different levels of granularity
- Varying levels of sophistication

**Formula**
- Replicating portfolios, time dependant loss functions or other formulas to approximate the change in assets, liabilities and/or capital

**Direct valuation/scenario based**
- Scenario determined to produce equivalent SCR at time 0
- Future capital amounts can then be derived from this assuming this scenario remains appropriate

**Nested stochastic**
- Full calculation of the SCR requirements at each future time period
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Investment conditions…

SOURCE: HTTPS://UK.FINANCE.YAHOO.COM/CHARTS?SYM=%5ETFAS&SRRANGE=
Case study: CWFS model office

Model Office

- KPIs / Scenario Summary
- Projected Balance Sheet (pillar I & II)
- Profit & Loss Projection

Inforce

- Consolidated IF
  - Prod1
  - Prod2
  - Prod3
  - Prod4

New Business

- Consolidated NB
  - New TESP
  - CTF

Assumptions

Actuarial Projection Model Output

CWU

Service Company

CU

2014 Convention knowing more 22-23 October, Cape Town
Case study: CWFS model office (cont’d)

Expense overrun: the difference between the loadings and the expected expenses; the base case showed that this grew over time.
Case study: CWFS model office (cont’d)

Pillar 2 - Excess assets (Base Case Scenario)
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Application to SAM: life insurance

Required Calculations

- Cashflow projections
- New Business Model

Projected P&L → Projected BS (inc. OF) → Projected SCR

Opening BS (inc. OF) → SCR

Solvency Projection
Application to SAM: life insurance (cont’d)

- At $t = -x$:
  - Assets
  - Liabilities
  - BOF
  - SCR

- At $t = 0$:
  - Assets
  - Liabilities
  - BOF
  - Projected SCR

- At $t = 1$ and beyond:
  - Projected Assets
  - Projected Liabilities
  - Calculated BOF
  - Projected SCR

Project using underlying stressed balance sheets

Project using BEL cashflows in P&L
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Application to SAM: short term insurance

• Approach:

  • Risk profile vector / claims development
  
  • High level cashflows based on run-off
    – Projection then largely similar to life approach above
  
  • SCR calculation:
    – Premium and reserve risk capital: calculate directly
    – Operational risk capital: formula
    – CAT risk: use risk driver(s)
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Advantages: why use a model office?

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Limitations and future developments

• Important for any company that uses this approach in practice to develop and tailor the methodology to reflect the unique characteristics of that business
  • Key element: factors used to project different elements of the balance sheet.
Limitations and future developments (cont’d)

• Develop the methodology further, for example:
  • Change the risk drivers used, including using a combination of risk drivers
  • Use more sophistication in some parts of the model
  • Validation and statistical quality tests and output
  • IFRS, stress testing, other metrics
Limitations and future developments (cont’d)

• Key assumptions:
  • Model assumes relationship between the elements within the best estimate projection and the elements within the associated capital requirements remain relatively stable over time
  • May not be appropriate for all companies
  • Is a reasonable assumption/methodology to start with
Limitations and future developments (cont’d)

G.I.G.O

Use of judgment crucial – avoid over reliance on model

- Tool to inform management decisions
- Not a crystal ball!
Questions?

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