Highlights of 2005 Life Convention

20 February and 1 March

London and Edinburgh

Plenary 3 : STARTING TO EMBED ICA

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Agenda - Starting to Embed ICA

- The “Use Test”
- Approach to ICA
- Senior Management Engagement
- Understanding Changes in ICA
- Demutualisation Scheme Management
- Investment Strategy
- Capital Planning/Projections
- Capital Management/Hedging
- Profit Reporting
- Strategy & Product Pricing/Development
- Risk Appetite

Embedding ICA - The “Use Test”

The FSA’s Sector Briefing says that they will test for ‘use’ by asking questions in 3 main areas:

- how you engage senior management and other technical expertise, and make use of appropriate data sources in deriving the ICA and other capital assessments;
- how you use the ICAS calculation principles and models for day to day management purposes; and
- how you use the results of the ICAS calculations to influence risk management strategy to prioritise risk management activity.

Caveat

- Our ICA has not yet been reviewed by FSA and we have not received ICG. It was submitted for review at end January.
- However, it does represent the approach to risk-based capital which we have been using over the last couple of years.

ICA High Level Methodology

- The starting point was to identify the key risks to which the business is exposed. We started with the risks identified under our existing Economic Capital framework and then took account of FSA guidance and emerging best practice.
- We apply stress tests relating to each risk type.
- We originally adopted a "run-off" approach in parallel to a VaR approach but postponed development when PS04/16 seemed to be framed in terms of VaR.
- In any case we were having some difficulty in combining the capital requirements for the risks covered by our run-off projections with those for other risks from a VaR approach. We have therefore only used the VaR approach for ICA.

Stress Tests and Aggregation of Risks (1)

- Risks are combined through the use of a "correlation matrix" approach.
- Our stress tests and correlation matrices have been derived by a combination of analysis of historic external data, analysis of own experience and expert advice. Where possible, we have benchmarked our stresses.
- We have had to accept that the historical data is limited in many cases particularly in the tails of the relevant distributions that we are interested in.
- We use a 2-stage correlation matrix approach which I believe is unusual.
- We have revised some correlations slightly to ensure that the overall correlation matrices are consistent ("positive semi-definite"); and
- As I can't show you our matrix this is the next best thing …….

Aggregation of Risks (2) - “The Matrix Reloaded”

Impact of Diversification on Results

- Our correlation matrices provide reasonable diversification but benefits are significantly lower than would apply had independence been assumed.
- Diversification benefits depend on the relative importance of different risks to the firm. We get quite a variation in diversification benefits amongst the life companies in our Group although the assumptions are the same in most cases.
- Under a correlation matrix approach, total diversification benefits are greatest when the capital required for each risk is of a similar size.

Approach to ICA - Other Issues

- We adjusted the results for certain risks where our investigations show that the capital required to cover scenarios with combined stress tests exceeds the sum of the capital required to cover each individual stress test (“non-linearity”).
- For some stresses we have investigated the impact of a non-uniform occurrence over the year.
- We have considered a number of scenarios:
  - to help justify the stress for particular risks;
  - to investigate non-linearity aspects; and
  - to compare combined scenarios with stresses combined using the correlation matrix approach.

Senior Management/Board Engagement (1)

- Board/Senior Management are familiar with risk-based approach to capital due to development of the group-wide Economic Capital framework in 2003.
- Senior Executives discussed initial ICA approach in July 2004.
- Initial results presented to Board in October 2004. Educational session from AFH and Risk Director on PSB included significant coverage of ICA.
- Assessment presented to Executives of the Banking Group in January 2005.

Senior Management/Board Engagement (2)

- Updated assessment presented to Senior Executives and then Board in July 2005.
- Educational session, including Guide to ICA and proposed methodology and assumptions, given in advance of Board meeting.
- Updated assessment presented to Risk Committee, Senior Executives and then Board in Dec 2005 prior to submission to FSA in January 2006.
- Assessment presented to Executives of the Banking Group in February 2006.

Practical issues - Improving/updating the ICA

- Our initial Economic Capital assessment was as at end-2002
- Our initial ICA was calculated as at end-2003
- The ICA has since been calculated as at end-2004 and mid-2005
- Our stochastic model office was developed in MoSes in 2003. It has been used for Realistic Balance Sheet style reporting to FSA since mid-2003.
- The model is generally used to produce monthly projections over 40 years with quarterly investment rebalancing.
- ICA in respect of the With Profits Fund is produced using this model
- ICA in respect of Non Profit business is produced deterministically
- Since our initial assessment:
  - Models have been further developed.
  - Processes have been improved and controls put in place
  - Stresses have been refined and additional risks considered
  - An external review has been carried out

Analysis of Change in Available Capital and ICA

- An Analysis of Change acts as an important check on the accuracy of the calculations and shows how the risks that the firm is exposed to are developing over time.
- The main items affecting analysis are changes in economic conditions, revised future economic assumptions reflecting financial conditions at 31 December 2004, the impact of new business written and changes in in-force business over 2005.

	£m	
Analysis of Change in Available Capital and ICA	Available Capital	ICA
Position based on 31.12.04 data and financial conditions	x	
Changes in basis of calculations	xxx	xxx
Changes in shocks or correlations allowed for	xxx	xxx
Revised end-2004 position if no changes to market conditions or business in force	xxx	xxx
H1 2005 economic experience	xxx	xxx
H1 2005 new business	xxx	xxx
H1 2005 experience	xxx	xxx
Updated Result	x	y
Excess of Available Capital over ICA	x-y	

Continuously Monitoring the ICA

- Calculating the ICA is a labour and PC-intensive exercise at present.
- We are developing a “surface analysis” to enable us to estimate the ICA following changes in key drivers (e.g. fixed interest yields, equity levels, equity volatility, corporate bond spreads, operational risk issues)
- Key drivers will differ from company to company.
- Key drivers are actively tracked.
- Ideally, we would then estimate the available capital over ICA as part of the monthly MI provided for each company - previously we did this as a free asset ratio.
- There are some doubts as to what the ICA would be following an equity fall but I believe the FSA have indicated that “Dampeners” would apply.

Demutualisation Scheme Implications

- Our Demutualisation Scheme requires us to maintain a certain amount of shareholder capital in a memorandum account to support the investment policy of the With Profits Fund.
- The Scheme is framed in pre-PSB language and solvency is referred to in various different clauses, mainly relating to shareholder support for the With Profits Fund.
- Our stochastic model replicates the management actions and sub-fund structure required under our Demutualisation Scheme.
- The impact of the post-PSB environment (including the ICA requirement) on scheme management requires careful consideration.

Investment Strategy and Realistic Balance Sheet

- The investment strategy for the With Profits Fund is influenced by the Demutualisation Scheme requirements and the ICA can only therefore have an indirect effect.
- For other funds we have been investigating the impact of alternative investment strategies on the ICA.
- As our stochastic model replicates our current investment strategy in future projections, we have also been investigating the impact of changes on the Realistic Balance Sheet.

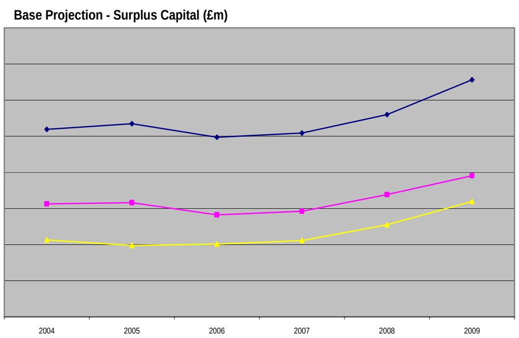
Capital Planning/Projections (1)

- There are three main capital constraints:
  - Enhanced Capital Requirement (Pillar I)
  - ICA (Pillar II)
  - Demutualisation Scheme
- Our model office allows us to project the Pillar I position (using closed form solutions to determine the Realistic Peak and any WPICC).
- The ICA is the most complex to project. We do not feel that we have calculated the ICA a sufficient number of times, or in enough scenarios, to enable us to confidently project it.

Capital Planning/Projections (2)

- To date we have based our projected ICA on factors for different product classes based on mathematical reserves. Half-yearly updates of actual ICA and analysis of change will help us develop this.
- We have projected the three capital constraints and available capital in stable future conditions with new business based on our current plans.
- We have also considered stressed conditions but to date we are only able to allow for:
  - variations in new business levels and mix; and
  - instantaneous investment stresses, not projections, allowing for stresses or stochastic projections.

Capital Planning/Projections (3)



Capital Management/Hedging (1)

- Our investigations are at an early stage.
- However, available and required capital projections were needed as part of a greater focus on capital management. More emphasis on optimal use of capital.
- We have mainly been looking at the impact of changes to investment strategy.
- This has included looking at some hedging options.

Capital Management/Hedging (2)

- We have considered the impact of some different hedging instruments on the ICA.
- A Guaranteed Annuity Rate "Hedge Asset" was already in place prior to demutualisation.
- We have also considered the impact of reinsuring blocks of business on the mortality or longevity components of the ICA.
- We have also considered whether the current Group structure is appropriate in an ICA environment.

Profit Reporting/Economic Profit (1)

- No direct impact on current reporting but adoption of European Embedded Value reporting would need to reflect ICA if this was biting.
- Economic Capital model is used in allocating capital amongst business units.
- Moving to an Economic Profit basis for internal reporting with a required return being set on the Economic Capital employed.
- Economic profit has been measured since mid-2004.

Profit Reporting/Economic Profit (2)

- This has led to a better alignment of profit measures used to the actuarial view.
- However, the implications of the results are still being understood - once there is more confidence in the results and their drivers more change is likely.

Strategy & Product Pricing/Development

- ICA and Economic Capital results feed into our Strategic Planning Process.
- Implications of alternative plans on ICA assessed.
- Recent product developments have allowed for ICA.
- In particular, for the guaranteed critical illness product development allowing for the ICA had a material impact.
- Difficult to model diversification benefits for new developments.
- For certain existing products an approximate allowance for ICA has been built on where impact was perceived as significant, e.g. annuities.
- As existing products are re-priced a risk-based approach to capital is being incorporated.

Risk Appetite

- Current approach is to base risk appetite on undiversified ICA capital with limits being set relative to Available Capital.
- Projections are used to assess the expected actual risk levels against the appetite based on plans.
- Levels relative to limits are reported to Risk Committee.

Aligning Economic Capital and ICA

- Our Economic Capital framework has been embedded rather than our ICA.
- Although similar there are significant differences:
  - Group diversification
  - Different confidence level
  - Different calibration of risks
- We need to ensure that we are treated consistently with the rest of our (Banking) Group for capital allocation purposes.
- The Banking Group are more interested in our ICA due to the Basel II Capital Adequacy framework & the Pillar II Group ICAAP within this.

Would we pass "The Use Test"?

- engage senior management and other technical expertise, and make use of appropriate data sources in deriving the ICA;
- use the ICAS calculation principles and models for day to day management purposes; and
- use the results of the ICAS calculations to influence risk management strategy to prioritise risk management activity.

Questions or Comments