The Actuarial Profession
making financial sense of the future

ICAS to Solvency II

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Objective of Presentation

- To provide a high-level 'gap analysis', ***to the extent appropriate***, between ICAS and Solvency II
- The reasons for the emboldening are
  - ICAS is still in the process of bedding in
  - Solvency II is still in the very early stages of development

Agenda

- Where are we in Solvency 2 — Tom
- Quantitative differences with ICAS — Sid
- Qualitative differences with ICAS — Tom

Timeline

Year	Commission	CEIOPS
H2 2007	Level 1 negotiations	Analysis of QIS 3 Preparatory work on level 2
H1 2008	Council and Parliament negotiations	Consultation on QIS 4 spec
H2 2008	Political agreement on level 1	QIS 4 report
H1 2009	Level 1 text published in OJ Mandate to CEIOPS on level 2	
H2 2009		Final advice on level 2
H1 2010	Commission proposal on level 2	Further development of level 3
H2 2010	Political agreement on level 2	Final guidance on level 3
2011	Level 2 text published in OJ	
2012	Implementation deadline 31 October 2012	

FSA philosophy

Our approach towards model recognition

- Develop the level 2 text and ensure it is practical
  - We will establish an 'expert group' with the industry to advise the Insurance Standing Group
  - Have also undertaken more detailed work with a small number of firms as part of QIS 3 focussing on modelling approaches
- Be open during the development process to firms have as much information as possible about what changes they need to make
  - But firms must recognise that there will be many uncertainties proposals change during the negotiating and legislative process
  - We will develop a pre-approval process to minimise wasted applications

FSA philosophy

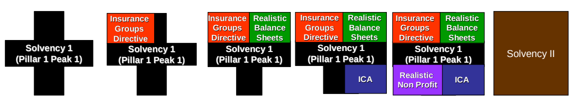
Our approach towards model recognition

- Whereas ICAS has the same aims as Solvency 2, as regards model recognition, we will lose our discretion to make allowance for the newness of the regime
- So the 'use test' will need to be strictly met, rather than 'working towards'

FSA philosophy

Summary of the use test

- Firms must demonstrate that their internal model is widely used in, and plays an important role in, their system of governance
- This includes strategic, operational and management decision making processes in accordance with their defined risk appetite.
  - Used in business decisions consistent with the representations made to policyholders about the financial security of the firm (eg surplus distributions)
  - Involvement in, or ownership by firm' finance risk and capital management functions
  - The same processes and data are used to produce the internal assessment as the regulatory assessment
  - Involvement in or ownership my firms' head office functions in the risk model's used for ICA purposes in subsidiaries (whether in the UK or overseas)



Before 2001	2001	2003	2005	2006 ….	….2012
Adequate for its time, but had the following shortcomings					
• does not allow explicitly for the full range of risks	• No change	• No change	• Allows explicitly for the full range of risks	• Allows explicitly for the full range of risks	• Allows explicitly for the fuller range of risks
• entity-level; not group level with allowance for group diversification of risks	• IGD requires a group capital assessment, still no group diversification	• IGD requires a group capital assessment, still no group diversification	• IGD requires a group capital assessment, still no group diversification	• IGD requires a group capital assessment, still no group diversification	• Can be a group assessment with group diversification benefits
• not very risk-sensitive; prudent / not realistic	• No change	• Risk-sensitive and realistic for with profit business	• Risk-sensitive and realistic for with profit business	• Risk-sensitive and realistic for with profit **and non profit** business	• Risk-sensitive and realistic for with profit **and non profit** business
• not harmonised across EU Member states	• No change	• No change	• No change	• No change	• Harmony with Member States
• prescribed approach; not much incentive/r reward for effective risk management	• No change	• No change	• principles-based with non-group diversification	• principles-based with non-group diversification	• As now, but potential for reward for good risk management

Potential differences between ICAS and Solvency II

Summary

1. Realistic liabilities
2. Capital requirement
3. Standard 'formulae' or internal model
4. Use Test – Risk and Capital Integration
5. Use Test – Other
6. Statistical Quality
7. Documentation and Disclosure
8. Groups

Realistic Liabilities

ICAS	Solvency II

▪ Realistic balance sheet for with profit business
▪ Realistic liability for non profit business e.g.
  ▪ Statutory liability less VIF
  ▪ Statutory liability recalculated after removal of prudent margins
	▪ Market-consistent technical provisions split by hedgeable and unhedgeable risks
	▪ Hedgeable (in a deep and liquid market): mark to market
	▪ Non-hedgeable: sum of discounted best estimate reserves and a risk margin. Risk margin based on a cost of capital approach and allows for all material cashflows

Capital requirement

- In principle, the SCR (at solo entity level) under Pillar 2 is to be determined in a similar way to the typical ICA i.e. impact of individual stresses on economic assets and liabilities aggregated via a correlation matrix, there are some differences, such as
  - Operational risk – hard to allow for in an objective SCR standard formula. Also operational risk
  - Differences in stress tests

Confidence level and time horizon

ICAS

- Requires firms to construct an internal model to determine their own capital requirement set at a 99.5% confidence level over one year

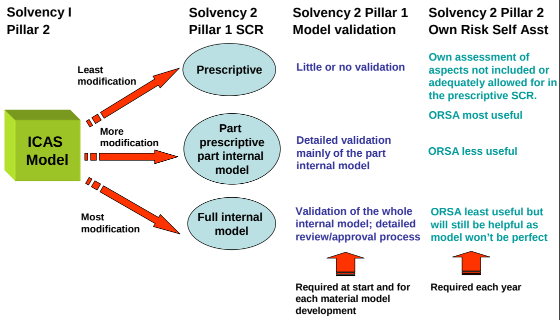
Solvency 2

- SCR is set at a 99.5% confidence level over one year capable of calculation using a partial or full internal model (in addition to the standard formula)

therefore…

- ...no surprise that UK firms will be looking to apply their ICAS models in the Solvency 2 regime

ICAS to Solvency II - model transition



Use Test – Risk and Capital Integration

- For Solvency 2, internal models need to be developed primarily for a firm's own risk and capital management to derive capital requirements at a confidence level consistent with the firm's own risk appetite.

  Firms then need to submit to FSA the assessment based on re-calibrating the model on the standardised 99.5% over one year
- Although, this was also the intention under ICAS, the slow evolution of internal risk appetites and embedding has meant that ICA is still often seen as a purely narrow regulatory exercise calibrated to 99.5% over one year

Use Test – Other

- To date, the ICA is less of a factor in taking strategic / capital / risk decisions as it is frequently owned solely by an actuarial / technical function
- For model approval under Solvency 2, firms will need to demonstrate that they have used their internal model within their business (e.g. risk management, asset mix, capital management, business planning, strategy, pricing decisions, reinsurance etc) with the finance divisions likely to 'own' such models

Statistical Quality

- Reviews to date have been heavily focused on the numerical aspects of the ICA. Significant expert judgement may have been used to set parameters which have often been deemed acceptable in our ICAS reviews
- Internal model approval for Solvency 2 is expected to be a significantly higher standard than an ICAS review hence additional scrutiny of firms' analytical processes and the control environment around the model is likely (if not necessary)

Documentation and Disclosure

- ICAS is currently privately reported information
- Under Solvency 2, public disclosure of results of internal models is likely, including any capital add-ons applied (after 5 years), with emphasis firmly on the firms risk and capital management processes via the Solvency and Financial Condition report.
  - *Full documentation of internal model and associated processes likely to be required.*

Groups

- ICAS - predominant focus on solo entity
- Should a firm seek group internal model approval, it is likely to need to demonstrate the areas highlighted above across the whole group (e.g. full group risk and capital integration). Significant increase in supervisory involvement is therefore crucial across group supervisors to understand internal model and governance processes.

Qualitative criteria

- We are aiming for 1 or 2 dozen criteria at level 2
- What might they look like, an example:
  - Art 117: "[firms] shall demonstrate that the frequency of calculation of the SCR using an internal model is consistent with the frequency with which they use their internal model for the other purposes …"
  - Issues:
    - Are approximate positions run more frequently?
    - Are ad-hoc runs done for major events, restructuring, change of assumptions, climate, longevity, or strategic decisions such as M&A
    - Costly to run, but ad-hoc is where many decisions are made
    - Trade-off between frequency and run accuracy
  - Minimum annually?

Qualitative criteria

- Another example: Control environment/model accuracy
- Art 118: "The methods used to calculate the probability distribution forecast shall be based upon current and credible information and realistic assumptions"
  - Issues:
    - Can the data be reconciled with MI and accounting information
    - What testing ensures that the model allows for firm changes in varying scenarios
    - How does a firm get comfort that extreme events are captured
    - How are new products added
    - Does the firm use modelling approximations or simulation to check model reliability
    - How often does the firm look at error estimation?
  - Minimum: internal validation results show that model and data errors are below a materiality threshold?

Qualitative criteria

- Need to have a pre-approval process for Solvency 2 models:
- Process followed for CRD model approvals began during 2003/4 for use of models from January 2007
  - Thematic reviews and focused firm visits during period 2003-05
  - First wave applications submitted by 31/12/2005
  - Decision by 30/06/2006
  - Use from 01/01/2007
  - Subsequent waves of applications had later milestones

Qualitative criteria

- Common questions   Some answers
- What is the distinction between a full model and a sum of partial models?
  A model is anything which is not the SCR formula
- Where the internal model produces a higher figure than the standard formula what is the incentive to go down the modelling route?
  Regulators may require it. Is the internal model 'wrong'
- To the extent that a model is used to inform elements of the standard SCR – what validation will that (partial) model go through as opposed to a full internal model?
  Probably a question of materiality to firms and the regulator
- How can firms be sure that their model will pass the "use test"?
  We intend to have a pre-approval process
- Which modelling platform does the FSA recommend?
  One you understand

Conclusions

- ICAS is the first step along the road to internal model approval within Solvency 2

ICAS is a privately-reported capital requirement
vs.
SCR via an internal model will be a firms main publicly-reported regulatory capital requirement

Questions?