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Variable Annuities: bridging the divide

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Agenda

Part 1 – Mike Claffey

- Irish Financial Regulator update – CP42
- Regulatory update from other countries – USA

Part 2 – Catherine Henshall

- Regulatory update from other countries – Europe
- Solvency II
- CEIOPS VA taskforce

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VA choice of head office locations to date

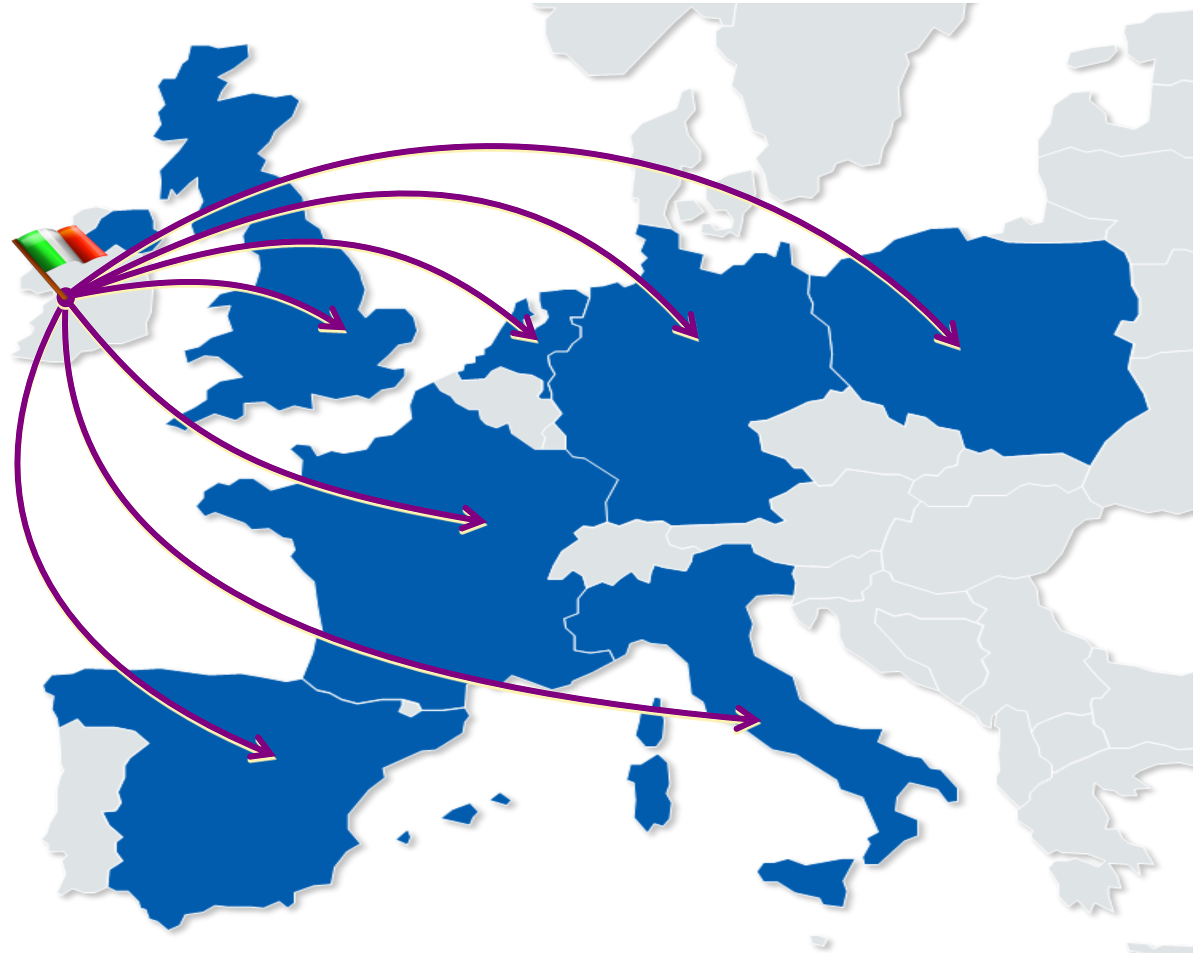
Ireland
- AEGON
- Allianz
- AXA
- Generali
- Hartford
- Met Life

Luxembourg
- Ergo
- R+V
- Swiss Life

Lichtenstein
- Baloise

Netherlands
- ING

UK
- Lincoln



Ireland head office spread of VA business across Europe

UK, Spain, France, Holland

Germany, Italy, France

Germany, Spain, Italy, Portugal, France, Belgium, UK

Italy, Germany

UK and planned Germany but closed to new business

UK, Poland, Greece, Spain

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Irish Regulatory update – consultation paper on “Investment Guarantees”

Consultation Paper 42

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Background to CP42

- There was no peer review agreed basis for VA reserving in Ireland.
- Following industry consultation, the Irish Regulator issued a consultation paper in May 2010 particularly focused on the Variable Annuity writers in Ireland (i.e. AEGON, Allianz, AXA, Canada Life, MetLife, The Hartford).
- This occurred at a time when CEIOPS was also becoming interested in Variable Annuity business in Europe – did VA present a systemic risk?
- The consultation paper is now closed, but in August the Financial Regulator issued individual quantitative surveys to all the VA writers in Ireland. This was effectively a "QIS" exercise on CP42.
- We await an update from the Financial Regulator.

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CP 42 proposal – Irish Solvency Capital for VA

"Capital and Reserves" total will be based on the **highest** of four requirements:

- **Basis 1(a)** VAR 99.5% on a lifetime projection basis with prudent allowance for lapses (something like CTE99)
- **Basis 1(b)** VAR 95% on a lifetime projection basis with no allowance for lapses (something like CTE90)
- **Basis 2** Solvency II standard formula based currently on QIS5
- **Basis 3** VAR 99.5% based on 1 year Solvency II internal model

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Irish Solvency Capital for VA (2)

- "Future Trading Offset" is the reduction in capital to reflect dynamic hedging

- FTO allowed in Basis 1 and 3 subject to limits
  - Upper limit of pre-determined percentage
  - Set by the board
  - Subject to actuarial certification
  - Justified by past experience - profit and loss attribution
  - Reflects extent to which dynamic hedging is adequately captured by model
  - Prudent basis

- This sets the total Capital and Reserves requirement ("CAR")

Linkage to Solvency II

- FR assumes lifetime projections would become part of ORSA
- Therefore Basis 1(a) (i.e. with lapse) needed as part of ORSA
- Basis 1(b) not formally needed but some regard required
- There will be a need for the internal model approach (Basis 3)
- Standard formula (Basis 2) will not a formal requirement but will probably be required as benchmark

Economic Scenario Generators

- Must allow for
  - Volatility at least as great as implied by market prices
  - "Volatility of volatility"
  - Minimum volatility levels
- Board must understand features and limitations of ESG
- Minimum 5,000 runs
- If calculations not performed at policy level then need to justify modelling accuracy
- Companies may have to provide calibration information to the FR (so called "Option Tables" over a 1 year horizon)

Financial Risk Analysis (FRA)

- New annual requirement – report must consider a prescribed list of headings (16 items)
- Will ultimately be part of the ORSA
- “Objective analysis of company’s potential exposure to all potential financial risks”
- Present to Board or Risk Committee
- If any risks identified not covered by CAR, then the CAR must be increased to an appropriate level

Sample calculations on CP42 bases (with no Future Trading Offset)

Market implied volatility (Basis 1)

CAR as % of Benefit Base	IRISH CTE	US CTE	BASIS 1 METHOD A	BASIS 1 METHOD B	BASIS 2 CAR
GMAB	12.90%	9.10%	40.00%	27.70%	16.00%
GMWB	21.40%	8.90%	71.90%	50.40%	11.90%

Long term volatility (Basis 1)

CAR as % of Benefit Base	IRISH CTE	US CTE	BASIS 1 METHOD A	BASIS 1 METHOD B	BASIS 2 CAR
GMAB	12.90%	9.10%	20.30%	10.80%	16.00%
GMWB	21.40%	8.90%	35.40%	16.80%	11.90%

Source – Milliman feedback to CP42.

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Next steps for CP42

- Financial Regulator is considering individual responses from companies.
- This work can overlap if you are considering an internal model for VA
- Tony Jeffery of the Regulator gave some hints recently on his personal views of VA's
  - Systemic risk consideration – "could the European VA market ever disrupt equity markets?" Not at current volumes (however could be exposed under contagion of risk from financial markets).
  - What were the 2008 lessons:
    - Basis Risk (including shallow indices)
    - Partial, poor or no hedging
    - Real world models too optimistic for short term behaviour
  - Don't rely on single models
  - Regulators should avoid pro-cyclicality and avoid dictating design
- CEIOPS VA task force will also influence CP42 (more later)

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Country updates - USA

Regulatory update from other countries

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Regulatory issues – USA and VA

- The US has moved to Principles Based Reserving ("PBR") following a very long development effort by government authorities, industry, academia, and actuarial bodies.
- Actuarial Guideline XLIII ("AG43") sets a new reserving requirement
- C-3 Phase II Risk Based Capital ("C3P2") sets a new total capital requirement

Summary of the US approach:

- AG43 - aggregate reserve equal to the higher of Conditional Tail Expectation (CTE 70) or results using a set of standard scenarios ("SS")
- C3P2 - risk based capital with market risk component calculated stochastically for GMDB and GLB product features

USA regulatory issues – initial reaction to AG43

- The 12 largest VA writers in the US commissioned a piece of work to assess the impact of the new regulations. This information was published by Oliver Wyman.
- The Oliver Wyman Variable Annuity Statutory Framework Review Initiative ("VASFRI") was published in June 2010. It identified some consequences of the new regulations:
  - Hedging can potentially increase reserves, and also Total Asset Requirements (counter-intuitive).
  - A deterministic Standard Scenario dominates more than might have been intended (as the SS does not benefit strongly from dynamic hedging). So dynamic hedging increases reserves (counter-intuitive).
  - Statutory capital movements not aligned with economic capital movements.
  - Level and volatility in statutory capital has increased, and it may be pro-cyclical.

- Report available on: http://www.oliverwyman.com/cn/VASFRI.htm

USA VASFRI Phase 2 – investigation into refinements (August 2010)

- AG43 and C3P2 institute a cash flow valuation methodology that still captures the "time to worst" concept
- Expand the options available for the AG43 and C3P2 Starting Asset Amount to include all assets supporting the variable annuity block
- Modify the calibration criteria, for AG43 and C3P2 stochastic economic scenarios, to be more responsive to starting market environments
- Alter the seriatim calculation of the AG43 Standard Scenario Reserve such that results are better aligned with the actual aggregate risk exposure
- Impose a cap on the AG43 Standard Scenario Reserve (e.g.CTE90) to avoid over dominance of TAR.

Source – Oliver Wyman

And the Society of Actuaries in the US also issued a RFP over the summer on further possible refinements.

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European update

Handover to Catherine Henshall

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Regulatory issues – Europe overview

- Currently a variety of approaches are adopted by different regulators, because:
  - Solvency I is a minimum requirement for all EEA countries
  - Solvency requirement 4% of Unit funds
  - Legislation is generally not considered to be sufficiently complicated and in many (European) cases does not give a high enough capital requirement
- There is an absence of regulation with respect to Risk Management and Governance
- Therefore some countries have requirements in addition to Solvency I, but this is not consistent across Europe.
- Supervisors have co-operated in reviewing VA portfolios for certain firms.

Regulatory issues – Europe

- UK has the ICA regime in addition to Solvency I
  - ICA is calibrated to a 1 year 99.5% VaR
  - UK is not considering major regulatory changes for VA business in the build up to SII
  - Relatively small volumes of business written to date
  - Firms already use models including hedging for their ICA calculations
- France
  - Extensive, wide ranging review of VA business
  - Concern about cross boarder issues arising from use of branches and international hedging centres
  - There are some France specific concerns around the contracts and legal issues that arise
- Italy
  - Watching its' main player carefully
- Luxemburg, Liechtenstein, others – depends on volumes of business written

Regulatory issues – Germany

- Existing German reserving rules did not anticipate Variable Annuities, e.g.

  a) Liabilities (accounting and reserving regulations)

  – Under insurance supervisory law (VAG), guarantees / reserves should be calculated per policy and using the maximum technical interest rate.

  b) Assets (VAG + investment regulations)

  – Strict rules governing assets to cover technical reserves. Generally investments in derivatives are not allowed. For unit-linked policies which provide guarantees, the assets backing the additional technical reserves required are subject to the VAG rules i.e. derivatives not allowed.

- Therefore domestic German insurers cannot easily offer VA products.
- Changes to VAG were proposed in 2008 aiming to overcome these obstacles. A decision was deferred by the government and implementation before 2011 seems unlikely.
- This suggests a continued focus on cross-border VA manufacturing for the German market.

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VA and Solvency II

Solvency II

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Solvency II - Pillar 1 capital

- There has been some discussion about allowance for hedges in internal models.
- The Standard Formula requires instantaneous stresses.
- Delta and Rho hedges do not perform well under instantaneous stresses, leading to high capital requirements.
- Rebalancing during the stress is allowed in internal models.
- Therefore, no allowance for rebalancing of hedges in standard formula stresses means that most firms will implement internal models for variable annuities.
- VA writers with small volumes of business may have a case to use Standard Formula
- Allowance for hedging in the modelling must be justified and closely aligned to the practice of the company.

Solvency II - Pillar II

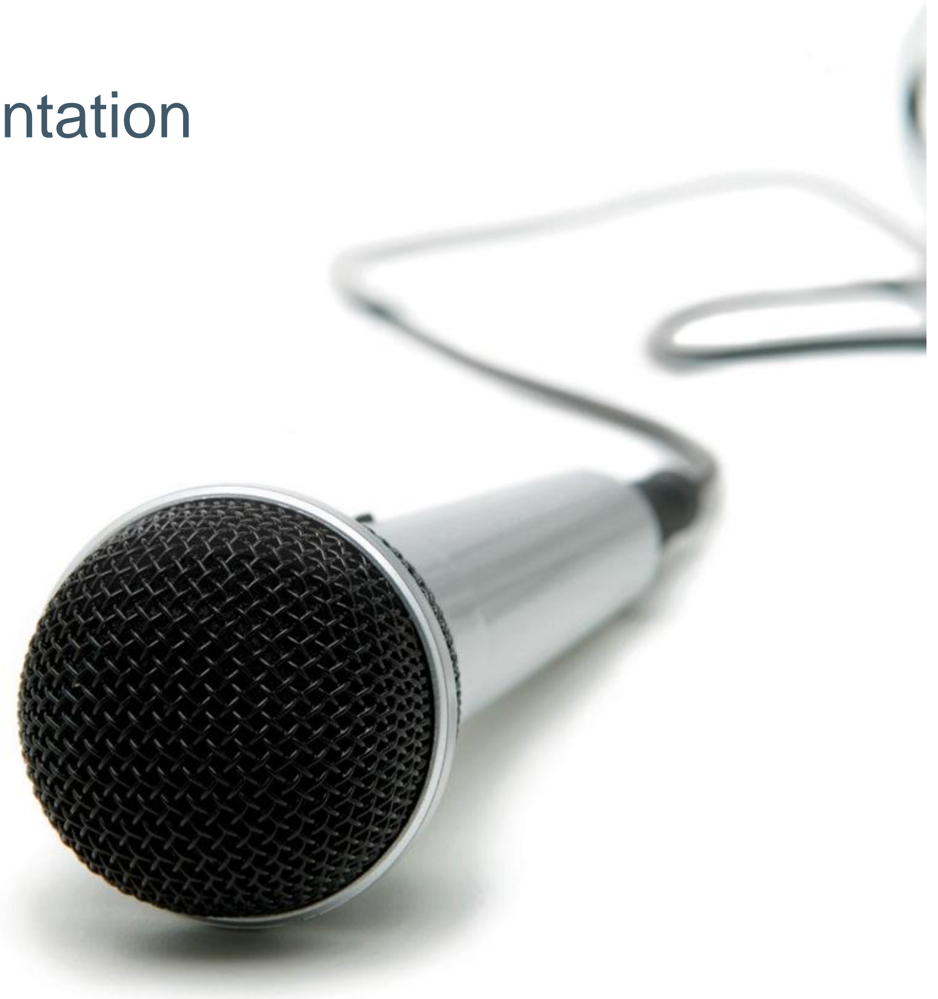
- Own Risk and Solvency Assessment (ORSA) - should use the internal model
  - Need to consider risks such as mis-selling and legal risks
  - VA writers should watch for any emerging challenges in this respect.
- The risk management framework is very important for VA business (as for all products) but the cross-boarder nature of the product design, hedging and extensive use of branches to write the business introduces complexities that may not be seen for other product types.
- Assessment of these risks will need co-operation within the College of Supervisors.

CEIOPS and the European Commission

- CEIOPS has a Variable Annuity taskforce which is due to publish a consultation paper in November 2010.
- The July CEIOPS members meeting endorsed the overall direction and focus of the taskforce.
- This paper will discuss the supervision of VA business pre and post Solvency II and may recommend Level 3 guidance for VA business, drawing on experience of European regulators to date.
- The European Commission has not directly addressed issues relating to VA business, but it may publish further guidance on hedging within internal models.
- CEIOPS recognises the importance of Colleges in the Supervision of VA business.
- Any guidance is expected to apply globally for EEA based insurers.

Questions?

The views expressed in this presentation are those of the presenters.



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