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General Insurance Pricing Seminar
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The Minimum A Pricing Actuary Needs To Know About Solvency II And Get Away With It

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Agenda

- Introduction
- Level 1 Text
- The Legal Minimum
- Pricing Actuary and Solvency II
 - Current Role
 - Pillar 1
 - Pillar 2
 - Pillar 3
- The Practical Minimum
- Final Thoughts

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Introduction

- Solvency II Aims to set out stronger EU-Wide requirements on Capital Adequacy and Risk Management for insurers
- It will apply to all insurance firms with gross premium income exceeding €5m or gross technical provisions in excess of €25m
- The directive is generally clear on requirements from certain functions:
 - Risk Management
 - Reserving
 - Capital Assessment
- But requirements for pricing actuaries is vague – opinions range from doing nothing to a process embedded into the internal model

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Level 1 Text

- Level 1 sets out the framework principles. this is the legal requirement
- There are 4 articles from level 1 text that have first order impact on the pricing actuary's work:
 - Article 41
 - Article 44
 - Article 45
 - Article 48

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Level 1 Text

Article 41 – General Governance Requirements

“...Insurance and reinsurance undertakings shall have written policies in relation to at least risk management, internal control, internal audit and, where relevant, outsourcing. They shall ensure that those policies are implemented.”

Level 1 Text

Article 41 – General Governance Requirements

- Underwriting and Pricing Controls
- Documentation
- Work with Internal Audit
- Review Policies
- Pricing models

Pricing actuaries have always been involved in various company controls – but the role will expand in future

Level 1 Text

Article 44 – Risk Management

“...The risk-management system shall cover at least the following areas:

- underwriting and reserving*
- Reinsurance and other risk mitigation techniques”*

Level 1 Text

Article 44 – Risk Management

- Pricing Function Encompasses
 - Underwriting (market pricing)
 - Actuarial /Technical Pricing
 - Catastrophe (Nat Cat) Modelling/Pricing
 - Reinsurance Optimisation
- The risk management system brings the above functions into the ERM framework

A company with a well functioning erm framework has at its core an integrated pricing function

Level 1 Text

Article 45 – ORSA

“...The own-risk and solvency assessment shall be an integral part of the business strategy and shall be taken into account on an ongoing basis in the strategic decisions of the undertaking”

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Level 1 Text

Article 45 – ORSA

- Can Strategic Underwriting/Pricing decisions be independent of ORSA?
- How does business demonstrate use test?
- Capital loading in pricing based on regulatory, economic or ORSA capital?

ORSA Is An Integral Part Of The Business Strategy

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Level 1 Text

Article 48 – Actuarial Function

“...Insurance and reinsurance undertakings shall provide for an effective actuarial function to:...

- express an opinion on the overall underwriting policy”*

Level 1 Text

Article 48 – Actuarial Function

- New if currently not feeding into the underwriting process
- however, typical tangible contribution is to feed future rate change assumptions into the business planning process
- What is in scope for *opinion*?
 - Products?
 - Markets?
- Increased involvement with underwriting?

Would the business see the pricing actuary role as independent of the actuarial function?

The Legal Minimum?

- Recent FSA opinion implies level 2 is their “expectation” not “advice”
- Surveys showing a number of companies will re-price following solvency ii implementation
- Governance and transparency resulting in re-structure and role alignment within pricing departments
- How will pricing actuary communicate in a solvency ii world?
- How many pricing job specs exclude solvency ii from required knowledge?

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The Legal Minimum?

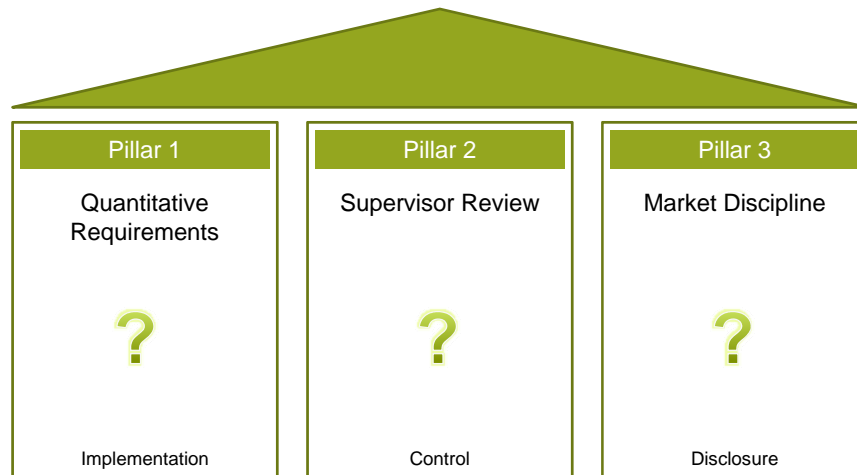
*So what is the minimum
a pricing actuary needs
to know about solvency
II?...*

...and get away with it?

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Solvency II – The Three Pillar Approach

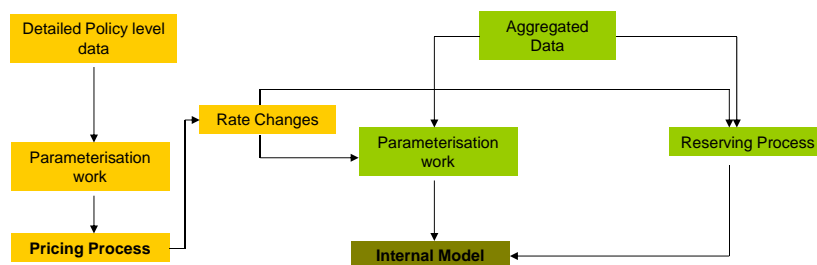


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Pricing Actuary & Solvency II - Current Role

Typical internal model processes structure:



Is independent parameterisation structure appropriate?

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Pricing Actuary & Solvency II - Pillar 1 ECM Parameterisation Process

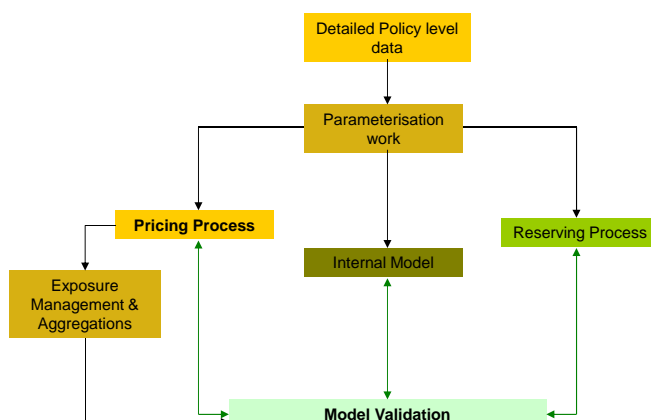
- **FSA IMAP feedback has pointed to some serious shortcomings:**
 - Application of expert judgement
 - Poor documentation of assumptions
 - Application of materiality concept
 - Aggregation and dependency
- **We argue that the shortcomings could have been reduced if:**
 - Pricing actuary was involved in the parameterisation of the ECM
 - Integrated pricing function in a fully functional ERM framework

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Pricing Actuary & Solvency II - Pillar 1 ECM Parameterisation Process

The process should look more like this



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Pricing Actuary & Solvency II - Pillar 1 ECM Parameterisation Process

How much does the capital actuary know versus the pricing actuary on.....

Think of a casualty line of business

- Tail modelling
- Clash modelling and dependence
- Loss components
- Exposure and inflation adjustments
- Casualty catastrophe modelling
- Application of tort reforms

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Pricing Actuary & Solvency II - Pillar 1 ECM Parameterisation Process

Better still, think of reinsurance modelling!

- Understanding of reinsurance t&c
- Reinsurance validation
- Reinsurance purchasing decisions are becoming model based

Reinsurance solutions and buying behaviour is changing under sii

Reinsurance pricing actuaries?

- Inwards reinsurance business?
- Reinsurer internal capital models?
- Reinsurance risk selection and pricing methods affected by SII

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Pricing Actuary & Solvency II - Pillar 1 ECM Parameterisation Process

Or, Think Of Nat Cat Pricing

- Different vendor models for pricing & aggregation!
- Will this be acceptable under SII?
- What about best practice ERM?
- What happens when we move into blended cat models world?
- What about impact of vendor model changes?

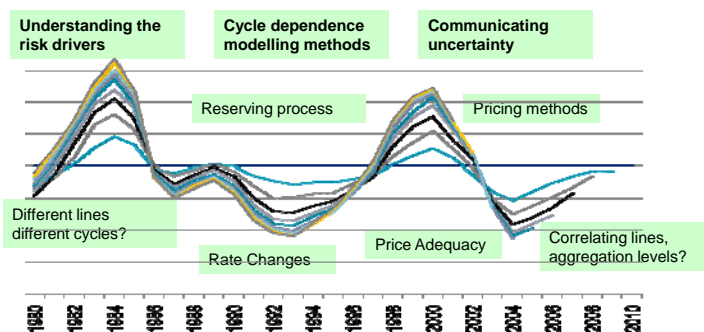
Aggregation management should be the sum of all risks priced

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Pricing Actuary & Solvency II - Pillar 1 The Insurance Cycle

Accounting for the cycle is required in the orsa framework of a multi-year internal model



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Pricing Actuary & Solvency II - Pillar 1 The Insurance Cycle

Understanding, Role and Accountability

Who has input on this in the internal model?
Should pricing actuaries not be consulted?

How important is the role of the pricing actuary in cycle management and maintaining price adequacy?

For example – what implicit assumptions being made in pricing about interest rate environment

All this implies more accountability in future for the pricing actuary!

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Pricing Actuary & Solvency II - Pillar 2 Further Risk Governance Requirements

- Capital allocation work feedback loop between internal model and pricing model
- Is rate monitoring feeding into business planning process?
- ROE loading and use of related risk metrics in decision making
- Product alignment to solvency II
- What is “best estimate” for pricing?

Demonstrating the use test of the ERM principles pushes the scope for pricing actuaries beyond level 1 requirements

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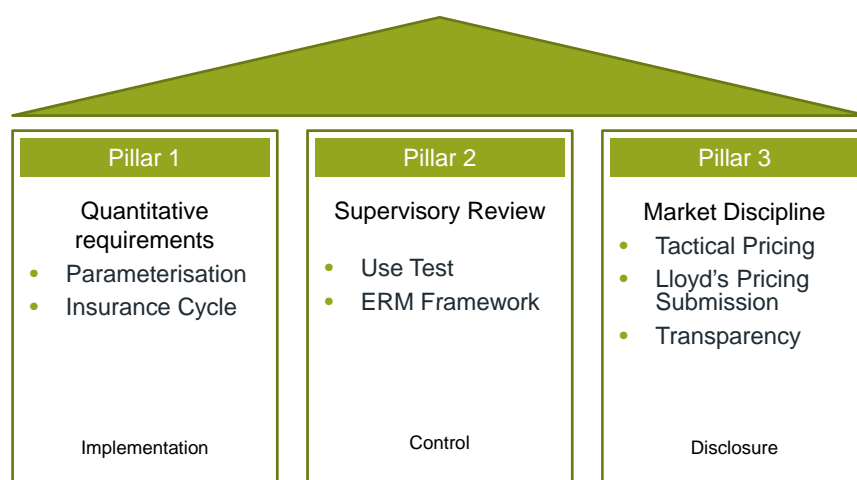
Pricing Actuary & Solvency II - Pillar 3 Disclosure

- Tactical Pricing Models
 - Capital efficiency
 - Product designs
- Transparency
 - Role alignment
 - Increased internal audit and governance
 - Improved documentation
- Technical pricing submission for Lloyd's (PMDP)

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Solvency II – The Three Pillar Approach



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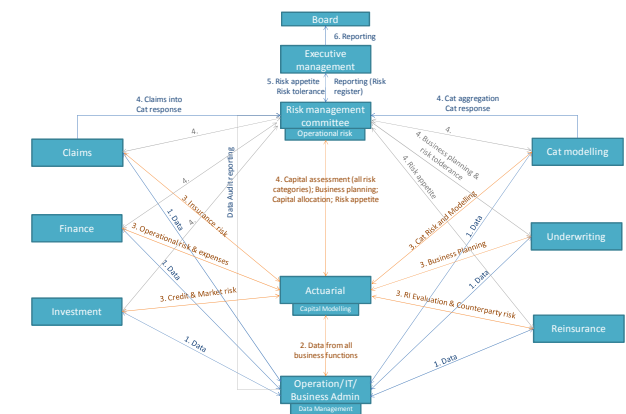
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Pricing Actuary & Solvency II Summary

What really is the minimum a pricing actuary needs to know about Solvency II and get away with it?

The Practical Minimum

ERM PROCESS FLOWCHART



Notes
1. Data from all functions and business units flows into data management
2. Data management is responsible for supplying all data and reports to all functions
3. Diagram omits non-essential ERM process flows
4. Double-headed arrows represent feedback loops

- ERM process considers entire organisation
- Risk management sits on top in a cascade structure
- Underwriting department not working in silo
- Closer integration of departments under solvency ii

The Practical Minimum

- Will vary between organisations but should be consistent with their own ERM framework
- Consideration also needed for:
 - The market in which company operates
 - Type of business company writes
- Pricing actuary needs to become familiar with the solvency II processes that are embedded within their organisation
- Comply with the associated reporting requirements

Is your company's solvency ii implementation a tick-box exercise or an entrepreneurial solution?

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Final Thoughts

- Not much a pricing actuary needs to do for Solvency II
- However, a number of major implications from other solvency ii implementation requirements:
 - Greater emphasis on risk management
 - Encourages a multi-disciplinary approach
 - Solvency II incentivises best premium/risk profile combination
 - Shift to more risk based pricing
- Companies may therefore have internal requirements

What is the minimum YOU will get away with?

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Questions