



What the brochure said

- “In late 2005, Standard Life initiated its “Embedding the ICA” project in the then mutual insurer.
- Since then, the risk management approach has developed into a robust group-wide framework covering UK, other European, Canadian and Asian insurance operations and also non-insurance parts of the group.
- This session will review the **journey, lessons learned** and **changes made** (in exposures, measurement and culture), and consider what **new challenges** and **opportunities** Solvency II may bring.”

Key themes

- Making the model's influence visible
- Level of board & senior management engagement with technical material
- Clarity over relative responsibilities
- Numbers versus what the numbers mean

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Agenda

- Early challenges
- “Embedding the ICA in the business” project
- Early examples of risk management actions driven by the economic capital results
- Timeline of group-wide framework development and risk management activity
- Later examples of risk management actions driven by the economic capital results
- Solvency 2 use test v “embedding the ICA”
- New challenges and opportunities

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FSA's objectives for UK solvency supervision

John Tiner speech – 9th November 2004

- That each firm holds capital that is appropriate to its business and to the quality of the controls it applies in its risk management.
- To emphasise the responsibility of a firm's senior management (including the Board) for ensuring that the firm has adequate financial resources.
- To provide incentives for better risk management.
- To enhance consumer protection and market confidence through a reduced, but not a zero, risk of failure.

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Early challenges with the RBS

Early 2005 conference presentation

- Doing the calculations
- Ensuring consistency with PPFM
- Specifying management actions in future (stochastic) conditions
- Calculating market consistent values of guarantees

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The challenge of market consistency

term (yrs)	strike price	Liability		%age diff
		Min	Max	
1	100	105.1	109.8	104.5%
5	100	106.3	116.7	109.8%
10	100	104.9	115.7	110.3%
15	100	103.9	114.4	110.1%
20	100	103.3	113.1	109.5%
25	100	102.1	111.7	109.4%
25 (b)	196	112.4	134.4	119.6%
25 (c)	303	131.5	163.9	124.6%

**From: “The realistic reporting of with profits business”
Hare et al (2005), BAJ volume 10, part II**

The challenge of market consistency

Source of figures

- Thanks to B&W Deloitte, Barrie and Hibbert, Deutsche Bank, Ernst and Young, Tillinghast Towers Perrin, Watson Wyatt
 - 3 risk neutral models and 3 real world deflator models
 - 2 models fitted yields to gilt curve and 4 to swaps
 - 1 model used historic volatilities and 5 used implied volatilities
 - 4 used historic correlation between equities and fixed interest, 1 used implied correlation in OTC pricing and 1 assumed 100% correlation
- Task was to price put options at various future dates
 - mainly “at the money”
 - also allowed for strike based on 60% and 100% of a risk-free return

Early challenges with the ICA

Early 2005 conference presentation

- Model choice
- Model calibration:
 - Volatility of markets
 - Correlation of markets
- Data limitations:
 - Lack of data
 - Inconsistency of data (especially for non-market risks)
- Deciding what approach to follow
- Sensitivity to current conditions
- Understanding and embedding in the business

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From ICA to economic capital

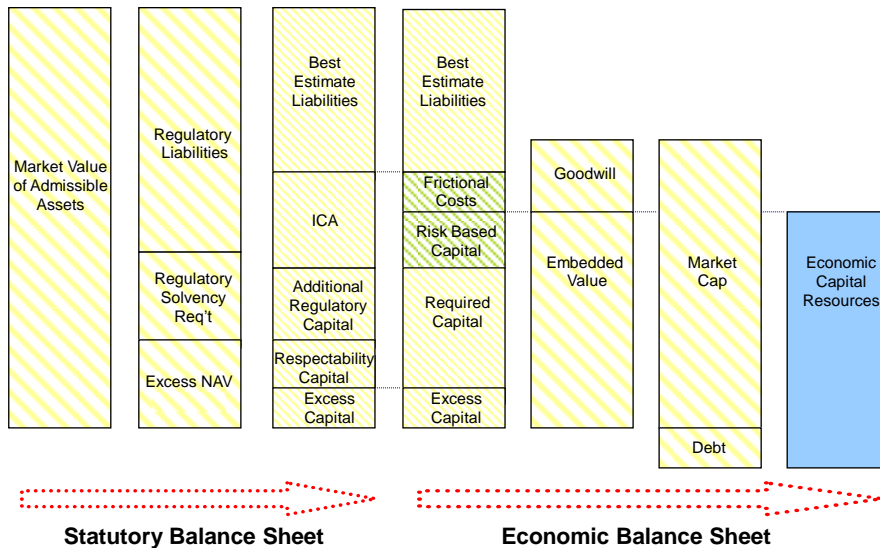
Group Capital Management and Allocation Project

- Late 2004 – early 2005
- Purpose was to develop, and integrate within the planning process, a capital management and allocation framework under which:
 - Capital is allocated (perhaps, in some cases, notionally) to business units
 - Targets are set for the return on capital or the value added through the use of this capital
 - Actual performance is measured and compared to targets
 - The information is used to inform strategic decisions

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Looking at the total picture ...



What we got to – summer 2005

- Drew the “Economic capital map” of the business
 - Showing capital allocation across business units
 - Showing capital split (RBC, Additional regulatory capital etc)
- Developed Group corporate centre
- Developed approach to risk-based business unit hurdle rates
- Continued to discuss treatment of diversification benefits
- Started education process to embed in mindsets
- Launched “Embedding the ICA in the business” project in insurance operations

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“Embedding the ICA in the business” project

- Launched in summer 2005
 - Following H1 “thought piece” and discussions
- Objective:
 - To ensure that full account is taken of ICA consequences in the running of the life and pensions business;
- Steering Committee consisted of:
 - MD Actuarial (Executive Sponsor)
 - Day-to-day Sponsor from Actuarial
 - MDs Finance and Marketing
 - ICA Team Manager
 - Non-UK operations representative
 - Group Actuarial representative
- Monthly meetings
 - Discussion forum to direct activity;

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Project deliverables / areas of influence

- Capital management
 - Risk appetite
 - Capital buffer
 - Business planning process
 - ICA monitoring process
 - Diversification benefit allocation process
- Business operations
 - Investment management
 - Product pricing
 - Profit reporting
 - Demutualisation project
 - Communication

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Example - Investment Management

- Strategy directed from Actuarial Division
- Implementation discussions led by Client Fund Manager
- Management and oversight meet in Asset/Liability Committee (ALCO)
- Market, Credit and Liquidity risks managed through:
 - Risk policies
 - Defined benchmarks and limits
 - Monthly MI pack includes compliance monitoring data
 - Regular Board review of appropriateness of investment policy
- Embedding the ICA activity provided:
 - Common currency for quantification of amount and shape of risk run
 - Link into Risk Appetite setting and review
 - Easier access to investment decision-making for non-actuarial senior staff

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Example - Product Pricing

- Carried out in Marketing Division
- Subject to oversight by Product and Pricing Committee
- Key document was Risk and Profitability Report (RAPR) covering:
 - business case
 - pricing results
 - discussion of relevant risks
- Embedding the ICA activity initiated:
 - Link to ICA model in terms of quantification of risks
 - Link to “Risk Register” to ensure ICA model kept up-to-date
 - Pricing calcs done on basis of “encumbered capital”
 - Risk-based hurdle rates used to assess whether a new (i.e. materially different) risk is worth running
- And raised awareness of risk amongst non-technical staff

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FSA: ICAS – one year on

- We see the ICA process as a key driver towards improvement in the quality of a firm’s risk management.
- Indeed, the benefits might extend to improving the quality of a firm’s management more generally including, for instance,
 - strategy formulation,
 - capital planning,
 - product development,
 - governance and
 - decision making processes
 in a firm.

Source: FSA Insurance Sector Briefing: ICAS – one year on (November 2005)

ICA: Governance and risk management

- We ask firms to indicate in their ICA submissions how much they use the approaches in their ICA (or higher operating capital standards) elsewhere in the business.
- We test for 'use' by asking questions in three main areas:
 - how you engage your 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 calculation to influence risk management strategy and to prioritise risk management activity.
- We recognise that for many firms in 2005, modelling processes are new and the process of integrating risk and capital management is still evolving.

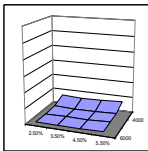
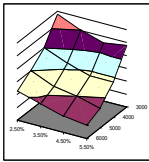
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Significant risk reduction in market risk exposure during 2004 - 2006

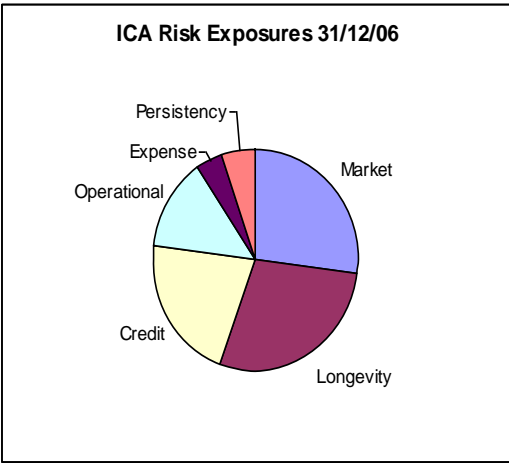
- With Profits Management Actions implemented
 - Deductions for the costs of guarantees
 - Removal of the Benefits of Mutuality
 - Bonus and Investment actions embedded in valuation methodology
- Decision to demutualise during 2006
- Equity hedge introduced to:
 - Reduce exposure to market risk
 - Reduce TVOG
 - Reduce exposure of policyholders to the risk of increased guarantee deductions
 - Treat customers fairly



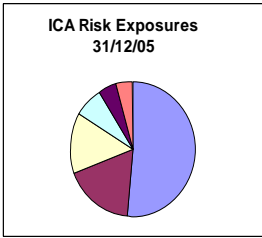
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Revised Risk Profile



▪ Illustrative figures



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Continuing ICA challenges

Early 2006 conference presentation

- Still lack of data
- FSA submission process (and concern over consistency)
- Stressed correlations and non-linearity
- Diversification benefits
- Philosophical issues
 - One year time horizon
 - Instantaneous stress; one year “real world”; “real world” run-off
- Making BAU (including embedding in the business)

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Pause for reflection - Key themes

- Making the model’s influence visible
 - **Influence was there, but not explicit**
- Level of board & senior management engagement with technical material
 - **Not much**
- Clarity over relative responsibilities
 - **Committees**
- Numbers versus what the numbers mean
 - **Some progress**

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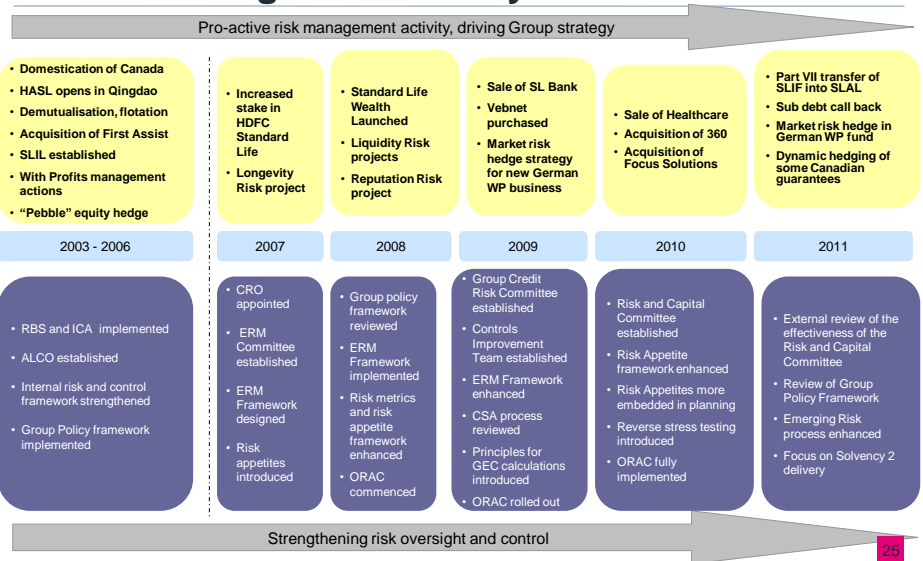
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Timeline of group-wide framework development and risk management activity



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The ERM Framework

Standard Life Approach

Risk Culture	<ul style="list-style-type: none"> • Right staff, right jobs, right behaviours, roles and responsibilities clearly defined • Right structure, effectively implemented, risk focussed committees and management • Group wide awareness, deepening understanding of risk, ongoing embedding and change
Strategic Risk Management	<ul style="list-style-type: none"> • Putting risk at heart of our business planning • Understanding our risks and strategy and making the right decision • Effective strategic control and allocation of capital
Risk and Capital Models	<ul style="list-style-type: none"> • Modelling and understanding our business • Managing complexity, achieving consistency and clarity with common metrics • Risks effectively quantified and business fully profiled
Emerging Risks	<ul style="list-style-type: none"> • Fully defined process for identification of emerging risks • Supported by reverse stress tests • Raising awareness at executive level and across the Group
Risk Control Processes	<ul style="list-style-type: none"> • Driving group wide operational excellence • Operational Risk and Control: Integrated system, consistent application • Active Control Management – make the right things happen the first time, identify when things have not gone right, understand why and recover the position quickly

A framework to enable the Executive and Board to make informed and consistent decisions about risk and reward

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Risk Appetite Framework

Risk Appetite Framework Aims

- Ensure we focus on risk management and mitigation, not just risk measurement.
- Facilitate quality conversations around the causes of risk exposures and the extent to which they are consistent with the Group's strategy and available capital.
- Maximise the engagement of those in the business in these conversations.
- Ensure that the framework facilitates the business planning process and allows risks to be taken that maximise the return on capital in the context of acceptable overall risk exposure.

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Risk Appetite Framework

Qualitative Risk Appetite Principles and Statements

- Provide guidance to the business;
- Help to drive our business strategy in line with the Group's risk appetite; and
- Enable the setting of quantitative risk appetites.

Quantitative Risk Appetite Statements

- Support the qualitative risk appetite statements and allow regular objective reporting of risk exposures against risk appetites;
- Exist where they assist with driving particular risk mitigation activity and actions or where they are a valuable control; and
- Based on 2 key risk metrics: Shareholder value at risk and excess working capital at risk.

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Later examples of risk management actions driven by the economic capital results

	Objective	Benefit	Risk Targeted
Longevity risk project 2007	Reinsurance of £6.7bn of annuity liabilities	✓ Reduced exposure to longevity risk	Market
		✓ Reduced exposure to market risk	
Market risk hedge strategy for new German WP business 2009	Hedge market risk in German With Profits Fund relating to both inforce fund and guaranteed return on future premiums.	✓ Lower capital requirement; strategic benefit for Germany in the ability to write new business	Market
Part VII transfer of SLIF into SLAL 2011	Transfer of the assets and liabilities in SLIF into SLAL	✓ Reduction in measured value for credit risk	Credit
Sub debt call back 2011	Receive approval to call back the LT2 Euro sub-debt to remove capital not deemed to be required under existing regulatory regime and which was not expected to count under Solvency II.	✓ Increase contribution to capital under Solvency II ✓ Avoid adverse market reaction ✓ Avoid potential reputational damage	Market/ Reputational
	Buy back some of the LT2 Euro sub-debt ahead of its call date in July 2012 to improve profitability	✓ Improved profitability from reduced interest payments	
Dynamic hedging of Canadian guarantees 2011	Support the development and launch of a variable annuity product with dynamic hedging	✓ Generate new business volumes & profits ✓ Experience of variable annuity market	Market

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Pause for reflection - Key themes

- Making the model's influence visible
 - **Influence now much more explicit**
- Level of board & senior management engagement with technical material
 - **Engagement had begun**
- Clarity over relative responsibilities
 - **3 Lines of Defence model established**
- Numbers versus what the numbers mean
 - **Risk appetite setting and monitoring had improved this but still too long spent producing numbers**

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Solvency 2 Use Test v “embedding the ICA”

- **Similarities**
- Essentially the same
 - Our ICA calculation is evolving into our Solvency 2 Pillar 1 calculations.
- **Differences**
- Group level, not SLAL only
 - Group-wide principles for economic capital calculations
 - Group-wide risk appetite setting and monitoring
- Higher evidencing requirements
 - Use test logs
 - Meeting minutes

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Solvency 2 Use Test v “embedding the ICA”

- **Differences (cont)**
- Bar raised on demonstrating senior management understanding of methodology
 - Training sessions on ERM framework, Internal Model and Solvency 2
 - 1-1 training; small doses
 - Solvency 2 mock interviews
 - Continual reinforcement

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New Challenges and Opportunities

- Keep up the good work
 - particularly following management changes
- Cultural alignment
 - tone set from the top that internal model matters
 - incentivisation and reward
- Integration into business strategy as well as risk strategy
 - both planning/setting and monitoring
- Board, exec and senior management understanding of model limitations
- Continuous improvement of internal model
 - with change driven by its use
- Use of other models too, to drive profitability through insight

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Questions or comments?

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