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...March 1-4, 2009, Four Seasons, Las Vegas, NV
A Global Gathering for Senior Life Insurance and Reinsurance Executives

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March 1-4, 2009

Las Vegas, NV

A3 - Reinsurance of "Taboo" Products – Has Your Reinsurer Gone Crazy?

David Florian, Andrew Perkins, Mitchell Schepps

Frank O'Neill
Moderator

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Reinsurance of “Taboo” Products – Has Your Reinsurer Gone Crazy?

Moderator:
Frank O’Neill
Managing Director
Swiss Re

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Health Products & Reinsurance

Andy Perkins
Senior Vice President
General Re Life Corporation

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AGENDA

What have reinsurers learned from recent experience in health product lines?

- Major Medical
- Medicare Products
- Long Term Care
- Other Products

How will "Healthcare Reform" affect us?

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WHAT HAVE WE LEARNED? - MAJOR MEDICAL MARKETS

- Little or no reinsurance demand from large insurers.
- Employers want to reduce costs.
- Intense competitive pressure, especially for smaller insurers and their MGUs.
- Largest insurers pushing further into the small group and individual markets.
- Some reinsurers have dropped out; some are acting as insurers.
- A cyclical business – are the good parts good enough?

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WHAT HAVE WE LEARNED? – MEDICARE PRODUCTS

- Changes in Medicare Advantage (MA) funding, and Part D, significantly changed the market.
- Funding increases gave MA a big advantage over Medicare supplement.
- Very little reinsurance demand in MA and Part D.
- Medicare supplement sales and persistency dropped.
- MA profits have been strong for many companies, but those products cost the taxpayer more than Medicare.
- Some reversal of the cost advantage is already happening.

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WHAT HAVE WE LEARNED? – LONG TERM CARE

- Reinsurers have suffered from the same issues as insurers (persistency, interest rates, etc.)
- Alignment of interests hasn't been as good as reinsurers expected.
  - Disagreements on rate increases
  - Claims management issues
  - Deals reinsuring only part of the risk
- There are fewer active reinsurers, and terms are tighter.
- Big question for everyone: What will happen to future claim costs?

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WHAT HAVE WE LEARNED? – OTHER HEALTH PRODUCTS

- Products offering less than comprehensive coverage are growing in importance as the market looks for less costly alternatives.
- Most do not involve jumbo claim exposure.
- Marketed both as true individual contracts and through worksite marketing.
- Reinsurance demand fueled by a desire for expert advice and risk sharing by new entrants and smaller carriers.

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HEALTHCARE REFORM

It's going to happen!

Why will it happen?

- Consumers want it (cost, uninsured population).
- So politicians want it.
- Employers want it (cost).
- America's Health Insurance Plans is lobbying for it.
- Evidence our health care system is not as good as those in some other developed countries.

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WHAT MIGHT REFORM LOOK LIKE?

- Built on the current system, not a single payer, social program.
- Changes are expected to be incremental.
- Likely to start with expansions of current programs to cover the uninsured.
- Likely to still rely heavily on employment-based coverage.
- There may be a federal program with insurers offering plans that meet federal standards.
- Not expected to mandate just one package of coverage.
- Efforts to try to improve quality, efficiency, transparency.
- Cost issues are likely to slow the pace of change.

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HEALTHCARE REFORM

- **Likely Impact On**
  - **Major Medical**
  - **Medicare Products**
  - **Long Term Care**
  - **Other Health Products**

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Longevity Reinsurance & Hedging

Mitchell A. Schepps
Senior Vice President
Aon Benfield

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Longevity Reinsurance

- Background
- Market overview
- Latest Longevity risk research

Background

- Little activity in North America
- Most of the activity is in the UK
- Many market participants in BPA market
- Fairly segmented market
- “Credit Crunch” appears to be hardening this market
  – Counterparty credit risk is becoming important
- Good capacity in reinsurance markets
- Capital markets - difficult conditions

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Market Overview

- 14 insurers plus capital markets
- Majority of BPA market participants want assets
- Types of solution (Scheme retains assets):
  – Longevity swap – insurance contract
  – Longevity swap – Capital market solution
  – Other capital market solution – Derivatives ,Bonds
- Other solutions involve asset transfers:
  – Transfer administration
  – ….more problematic given credit crunch

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Market Overview - Who provides what?

Insurance	Banking	Reinsurers
L&G	JMP	Swiss Re
NU	Credit Suisse	Munich Re
AIG Life ??	Deutsche Bank	Pacific Life Re
AEGON	Pension First	Partner Re
AXA ??	EIB/BNP - Bond	LRG
Prudential		RBC
Paternoster		Manulife
PIC (includes Synesis)		……….
Goldman Sachs		
MetLife		
Swiss Re		
Lucida		
Life Trust		
Canada Life		

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Market Overview - Pricing

- Not possible to say precisely – depends on scheme experience and characteristics
- Competitive – is market showing signs of hardening ?
- Most will require a long history of mortality data before agreeing to take it on

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Market Overview - Structure

- Most are willing to be flexible

  e.g. could provide stop-loss cover over a particular life expectancy
- Individual member or population based (most moving towards individual member)
- Can bolt onto interest rate/inflation swaps to create a synthetic buyout (compare “price” with buyout)
- Can work on subsequent buy-out (novate to insurer)

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Market Overview - Availability

Company A	– up to £500m
	- just pensioners or some older deferreds
	- big focus – some significant recruitment
Company B	– over £500m
	- will cover deferreds if taken out with pensioners
	- can offer g’teed surrender terms
Company C	- over £100m
	- cover over 50s
Company D	- over £100m
	- will look at deferreds

Other Reinsurers will fall into this category

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Market Overview - Challenges

- Communication / complexity
- Price
- Documenting the product
- Counter-party risk
- Not yet tradeable

Longevity Research

- Background
- Market overview
- Latest Longevity risk research

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Latest in Longevity Research

- CMI are going to produce a projection tool for scheme actuaries
  - Concerns over Interim Cohort Projections and variants
  - Develop a relatively simple spreadsheet based model
  - Capable of widespread application
  - Consultation paper by March 2009
- Research activity
  - Mortality by Cause research group
  - Faculty of Actuaries Mortality Working Party
  - CASS university – Prof Steve Haberman: Dependent competing risk survival beyond the limit - impact on annuities and life expectancy
  - Further development of the stochastic mortality models

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Overview I

All Causes

Source: Mortality by Cause Projections Support Medium Cohort as Reasonable, Life Convention Amsterdam, 11th November 2008, Mortality Projections by Cause Research Group.

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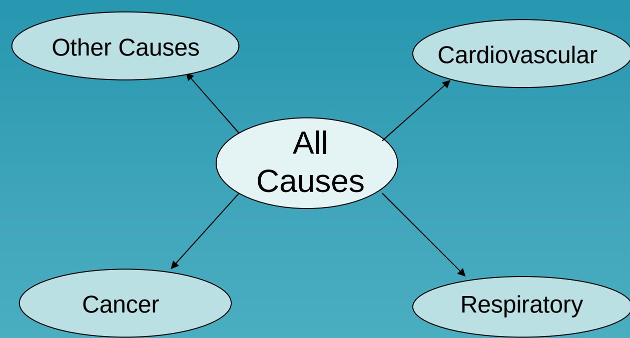
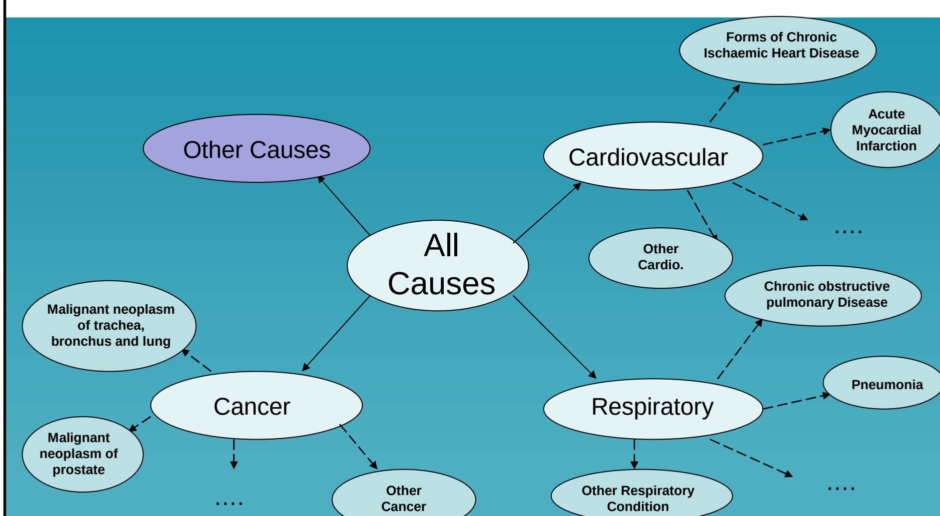
Overview II



Source: Mortality by Cause Projections Support Medium Cohort as Reasonable, Life Convention Amsterdam, 11th November 2008, Mortality Projections by Cause Research Group.

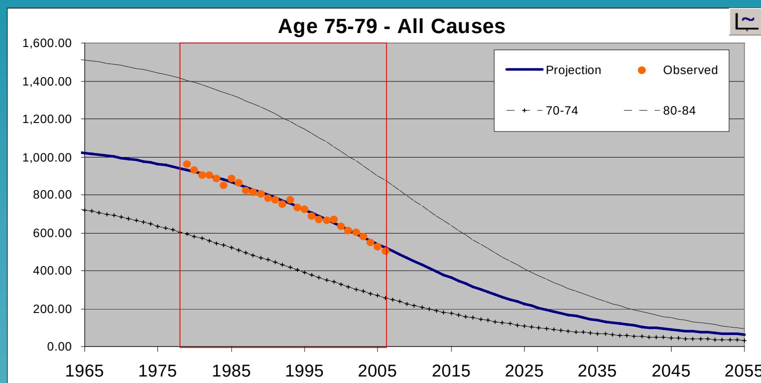
Overview III



Source: Mortality by Cause Projections Support Medium Cohort as Reasonable, Life Convention Amsterdam, 11th November 2008, Mortality Projections by Cause Research Group.

Results

All causes, Male, Age 75-79



Source: ONS data

Source: Mortality by Cause Projections Support Medium Cohort as Reasonable, Life Convention Amsterdam, 11th November 2008, Mortality Projections by Cause Research Group.

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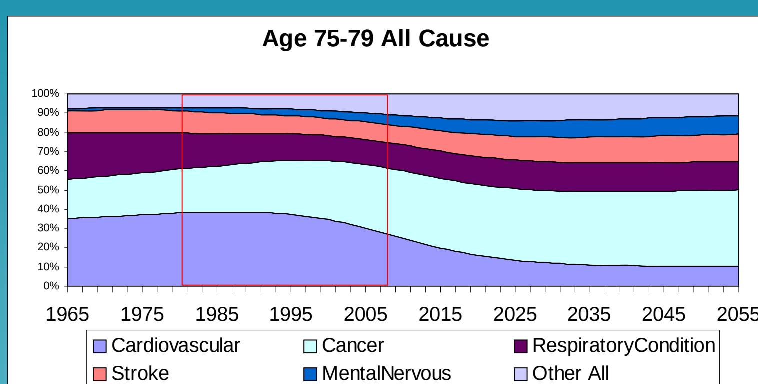
All causes, Male, Age 75-79



Source: ONS data

Source: Mortality by Cause Projections Support Medium Cohort as Reasonable, Life Convention Amsterdam, 11th November 2008, Mortality Projections by Cause Research Group.

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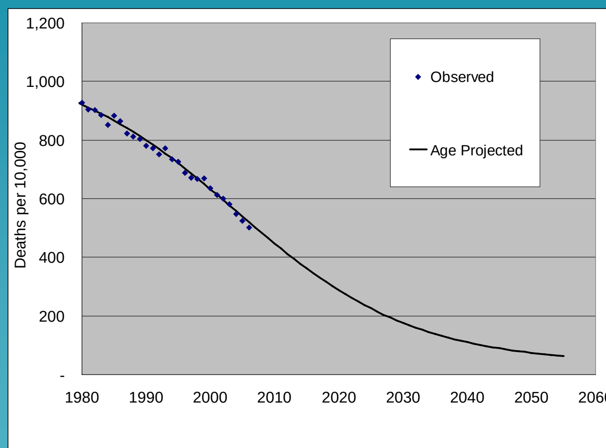
Overall Impact
- Age75-79, Male, age aggregate trend



Source: ONS data

Source: Mortality by Cause Projections Support Medium Cohort as Reasonable, Life Convention Amsterdam, 11th November 2008, Mortality Projections by Cause Research Group.

The Future?

- Limited insurance market for longevity swap for large schemes
- Counter Party Credit becoming more important
- Several solutions do not offer collateral
- Introducing more reinsurers will enhance competition and will be attractive to larger schemes
- Reinsurers have a diversification benefit which may lead to keener pricing
- Recently reinsurers more interested in longevity risk only and not assets – in contrast to recent transactions

Alternative Risk Solutions

- Alternative Risk Transfer and Financing encompass a range of solutions that can assist companies in the financial management of their business by drawing on methodologies from the insurance and banking sectors.
- Key examples include captives and protected or incorporated cells, which are often used to manage complex or unattractive risk exposures that are difficult to insure by conventional means in the traditional market.
- More recently, large corporations have shown an interest in writing long-term pension business through captives with a view to achieving efficiencies in investment, administration, control and governance.
- These solutions can be extended for longevity risk.

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Managing Variable Annuity Guarantee Risks

David Florian, ASA
CEO
Union Hamilton Reinsurance, Ltd.

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Overview

- Variable annuity sales have grown at a strong pace benefiting from the rise of equity market in recent years
  - Current assets exceeded 1.3 trillion at the end of 3Q08
- Significant exposure to embedded guarantees lead to increased scrutiny by risk management
  - Demand for reinsurance continued to increase
- Market participants were forced to re-examine the risks that were being originated
  - What are the real risks that are being written?
  - Can VA risk be broken into different components?
  - Are these risks hedgeable?
- Under a different framework reinsurance is a possibility again!

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What is really being written?

- Variable Annuity is
  - insurance contract providing consumers needed security for retirement assets and income
  - complex financial derivatives embedding:
    - ❖ Market risk as a first order issue
    - ❖ A series of financial puts, path dependent on the outcome of actuarial assumptions
    - ❖ Significant exposure to market variables (i.e. 'Greeks')

	Put, Call & Exotic Options	Index Futures & Swaptions	Interest Rate Futures & Swaps
"Delta" Sensitivity to Market Movements	✓	✓	
"Gamma" Sensitivity of Delta to Market Movements	✓		
"Vega" Sensitivity to Implied Volatility Changes	✓		
"Rho" Sensitivity to Interest Rate Changes	✓	✓	✓

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Managing VA guarantee risks

VA guarantees can be viewed as a hybrid of capital market risks and actuarial uncertainties

- Capital market risks
  - Equity market and interest rate risk can be largely neutralized via an array of financial instruments
    - ❖ Long dated put and exotic options
    - ❖ Index futures, interest rate futures, and swaps, etc
  - Asset allocation/basis risk
    - ❖ Managed through product control
- Actuarial and behavior risks
  - Mortality and longevity risk is relatively minor
  - Lapse and guarantee utilization
    - ❖ comfort in the US surrounding some policyholder behavior has increased with experience

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Managing VA guarantee risks (cont'd)

Can VA risks be completely hedged?

- Capital market risks can be mostly hedged
  - Residual asset allocation uncertainties
  - Mismatch in maturity of available securities
  - Illiquidity of some market instruments
- Actuarial assumptions will create real actuarial basis risk and cannot be hedged
  - Experience with policyholder behavior is key to risk management

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VA Risk Profile Migration

- In the 90s, the most predominant guarantee contained in VA is GMDB
  - Mostly equity market risk with modest actuarial risk
  - Can be hedged fully without much residual risk
- In the bull market post 2002, sales of VA products with living benefits accelerated
  - Lifetime GMWB quickly gained enormous popularity
- More recently race among insurers propelled ever-richer benefits
  - 10% roll up, 6.5% for life, non-hedgable market underlying
  - Led to bad risk profiles and growing hedging cost
    - ❖ Actuarial risks increased creating more uncertainty in hedging capital market risks

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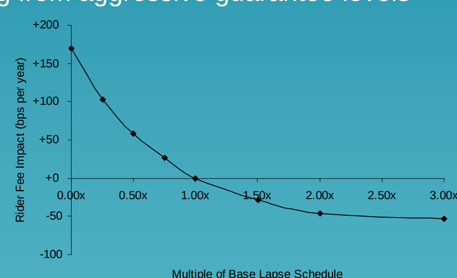
Taboo Risks?

- Emerging markets, commodity or real estate underlying funds pose challenges for lack of tradable tracking indices
  - Scarce liquidity of tracking indices
  - Basis risk can be substantial
- Bad risk profiles resulting from aggressive guarantee levels
  - Prices/profits are more sensitive to lapse as guarantees become more aggressive
  - Risks are not adequately compensated for



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Concluding thoughts

- This unprecedented market turmoil has exposed many problems generated by rapid growth of variable annuity in recent years
- Overly aggressive product features have amplified embedded risks and hedging costs have soared
- Large hedging losses and increases in capital will continue to pressure insurers to take a back to basics product design approach
- Reinsurers will continue to participate in the market given a return to more disciplined market consistent approach to guarantee pricing and less aggressive guarantee offering

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