Longevity market transactions – a user’s guide

9 December 2010

A history lesson

Standard tables
No cohort analysis
Immature schemes
+ high net interest rates
= defer thinking

Mortality improvements
analysed by cohort
Fading mortality improvements still the norm

Mortality treated as base + improvement
Continued future mortality improvement taken seriously

Mortality rating by address (initially only bulk annuities, now individuals)

Per person mortality rating is standard
Longevity risk understood, routinely priced, even traded

? But what if experience is different?

LONGEVITY RISK
Longevity risk vs economic risk

Mortality and most other economic risks are fundamentally different:

**Economic risks**
- The longer I run the risk, the more predictable (in relative terms) the outcome
- “Funnel of doubt” expands at a lower rate further into the future.
- “In the long term, risky assets outperform”

**Longevity risk**
- The longer I run the risk, the more extreme the outcome could be
- “Funnel of doubt” diverges
- “Once longevity starts to move against me, it will probably get even worse”

The flavours of longevity risk

**Idiosyncratic Risk**
Even if you knew the “correct” mortality rate, experience will differ, particularly in small schemes

**Basis Risk**
How your scheme differs from the big population, and the difficulty of measuring this and its implications

**Trend Risk**
Changes in a general longevity for a big population (e.g. England and Wales, insured lives, or SAPS)

“First person to live to 1,000 might be 60 already”
Risk management options

**Buy-out**
- Transfer all liabilities to an insurance company
- Limited risk remains with the Fund

**Buy-in**
- Purchase bulk annuity contract held as an asset of the scheme in respect of some or all of the members of the scheme
- Fund retains Insurer credit risk

**Longevity insurance plus LDI**
- LDI plus longevity hedging
- Some investment, inflation and credit risk

**Optimised flightpath**
- Remove unrewarded risks
- Moderate (targeted) asset risk

**Traditional pension scheme investment**
- Mixture of equities and bonds

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Longevity swaps

- **PENSIONER**
- Monthly payment until pensioner dies

- **PENSION FUND**
- Floating Leg
- Monthly payment to scheme until pensioner dies

- **PROVIDER**
- Fixed leg
- Monthly pension payment to provider for fixed term

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- Unfunded structure – no up front asset payment to the provider, structure is a cashflow swap
- Members continue to receive pensions from the fund – the provider pays those same amounts into the fund
- Fund is exposed to the credit risk of the provider – however several credit mitigation structures are available
- Fund also retains the investment risk of the assets, inflation risk can be retained or transferred
Who wants this risk?

- Global reinsurance market “long” on mortality risk, “short” on longevity
- Capital market beginning to demonstrate a level of interest
- Role of the intermediary is to transform risk into an acceptable form

Anatomy of a longevity hedge
The cast

- Investment Adviser
- Collateral manager
- Scheme Actuary
- Company Actuary
- Trustees
- Company
- Scheme lawyer
- Company Lawyer
- Administrator
- Project Manager
- Scheme Auditor
- Company auditor
- PR/Communications

The difficult bits

- How do you measure the longevity risk you are removing?
- Collateral
- Truing up data
- Legals
Collateral

- Day 1
  - The scheme is likely to have to post
- Assets
  - What have you got
  - What you want to be left with if the worst happens
- Measurement
  - Similar to LDI but still some challenges
- Longevity basis
  - Base table is straightforward
  - Future improvements is a challenge
- Manager costs

Benefits and data

- Know your data
- Custom & practice as well as the rules
- Truing up
Legal issues

- Termination
- Surrender
- Annuity
- Restructuring
- Novation
- PPF
- Risks transferred e.g. admin risks
- Indemnities and warranties
- Dispute Resolution
- Execution
- Data Protection

Lynda Whitney: Biography

Lynda has over 12 years experience of advising primarily trustees and is scheme actuary for schemes ranging from £100m to £3bn. Her recent successes include:

- Working as a scheme actuary in a multi-disciplinary team that developed the synthetic buy-in deal between RSA and Goldman Sachs in 2009
- Leading her client through a period of significant change culminating in the purchase of annuities as an asset of the scheme for all members in Autumn 2007. This scheme has recently completed solvent winding up.
- Working with a client to establish a long term integrated investment and funding flightpath allowing them to derisk significantly in summer 2007
- Working as part of Hewitt's 'alternative financing' specialist team on security structure, contingent asset and other non-cash funding methods.

Lynda's clients describe her as "proactive, responsive, human. Lynda is able to explain things without jargon".
Momentum conference 2010
Lynda Whitney