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Longevity swap markets – why just the UK?

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Agenda

- 1 Settlement across the world

- 2 Is longevity risk universal?

- 3 Established markets

- 4 Challenges elsewhere?

- 5 Conclusions





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Settlement across the world

Settlement across the world...

- Global longevity risk transfer* is dominated by UK transactions with *UK pension schemes and UK insurers* ceding risk to reinsurers...
- ...although in recent years there have been a number of notable deals in the US, Canada and the Netherlands, including...

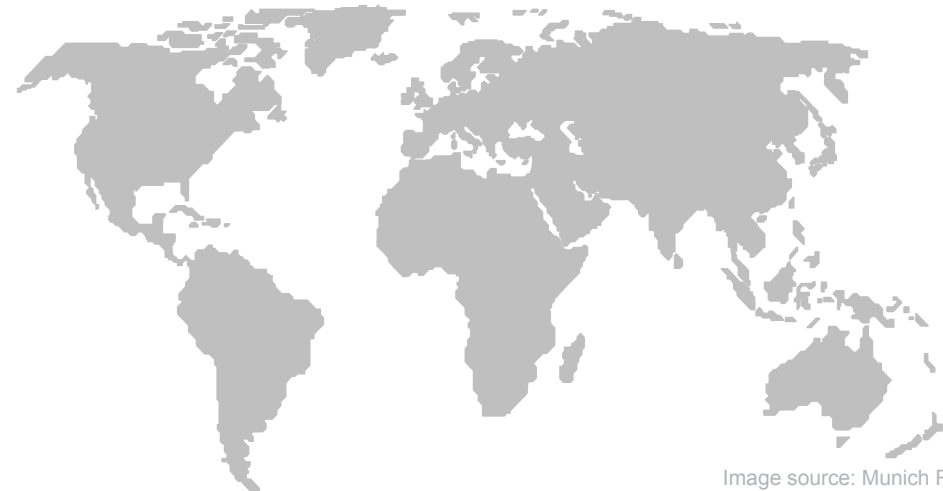
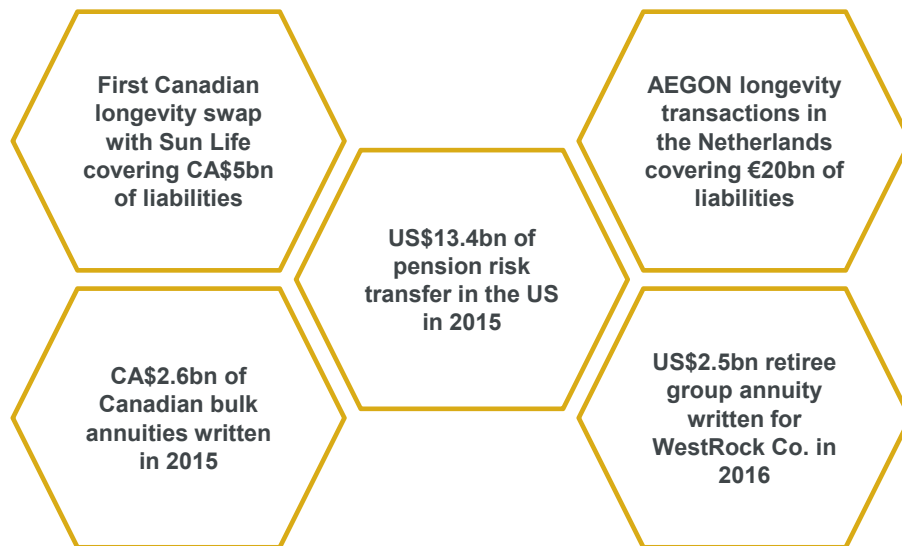


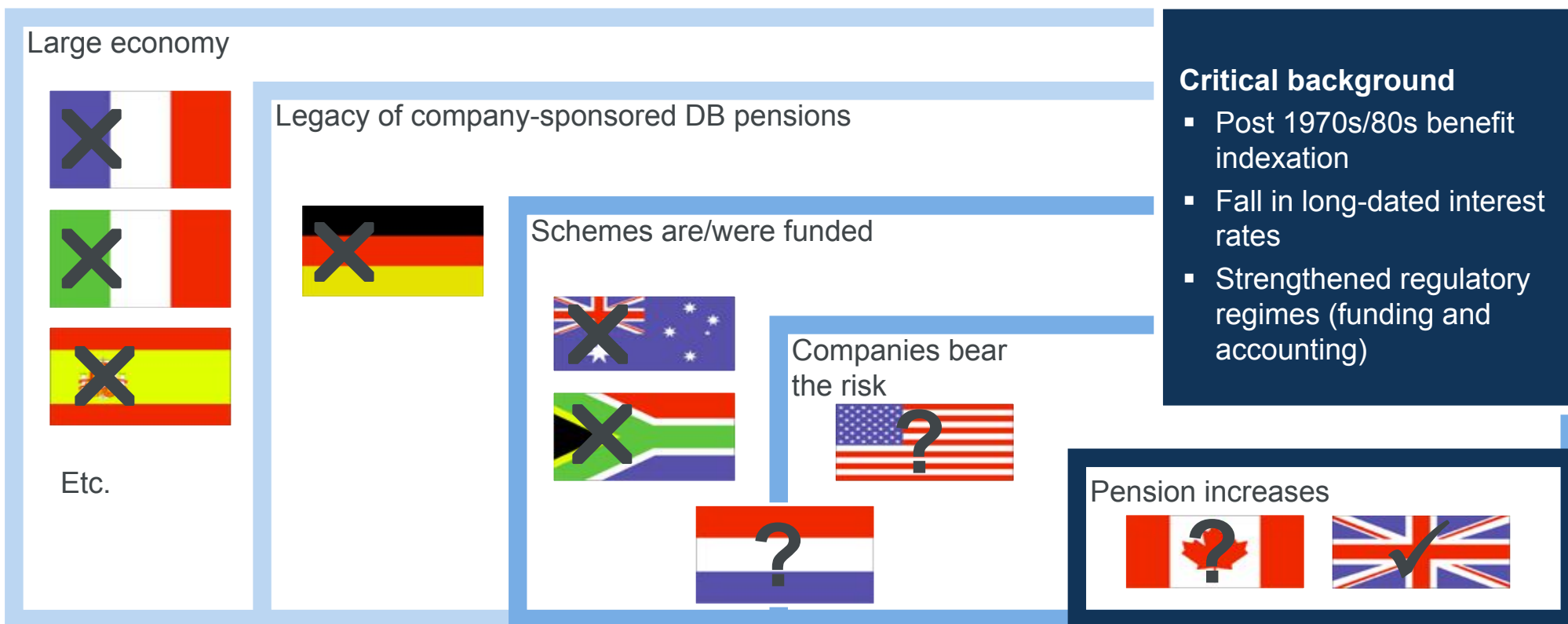
Image source: Munich Re

*Including both bulk annuities and longevity swaps

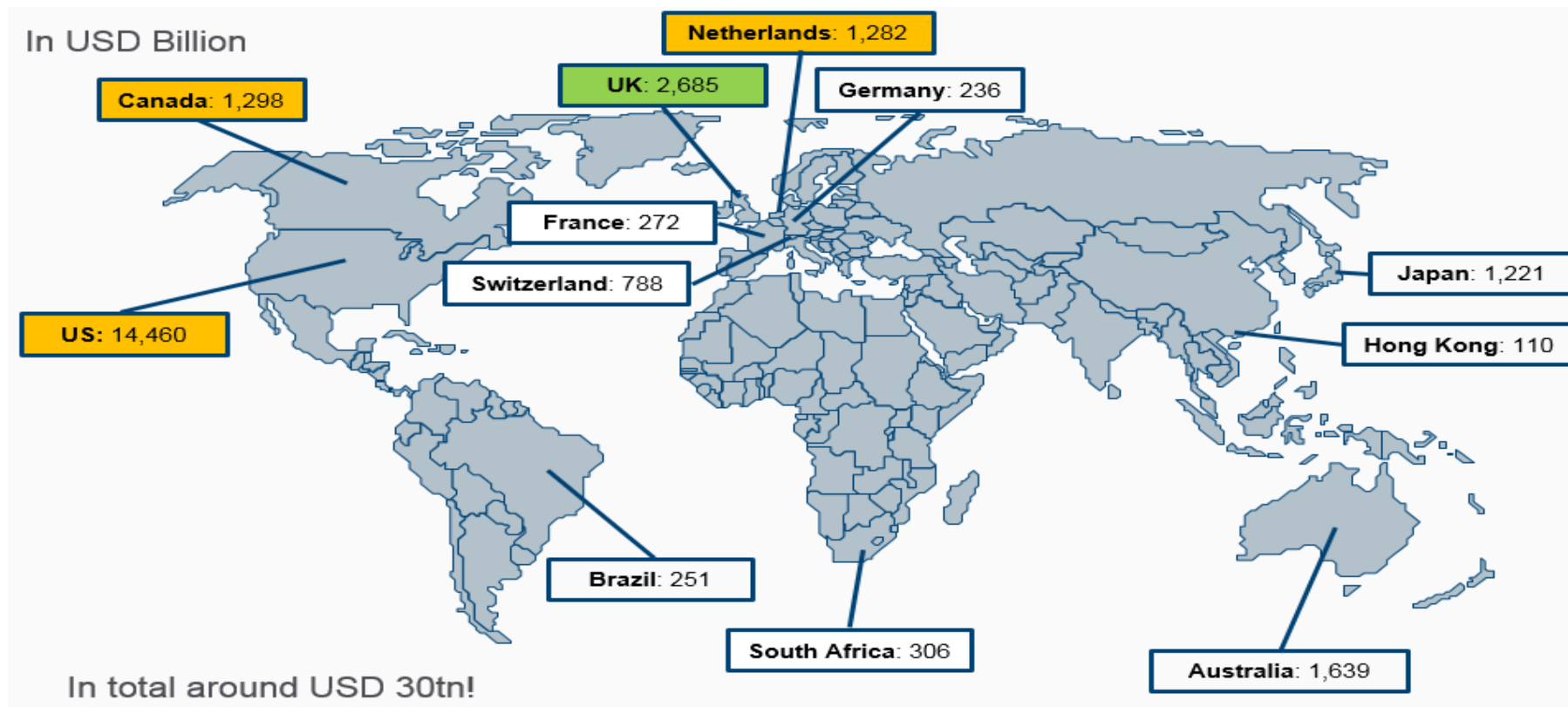


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Drivers of a settlement market – pension scheme perspective



Global longevity exposure

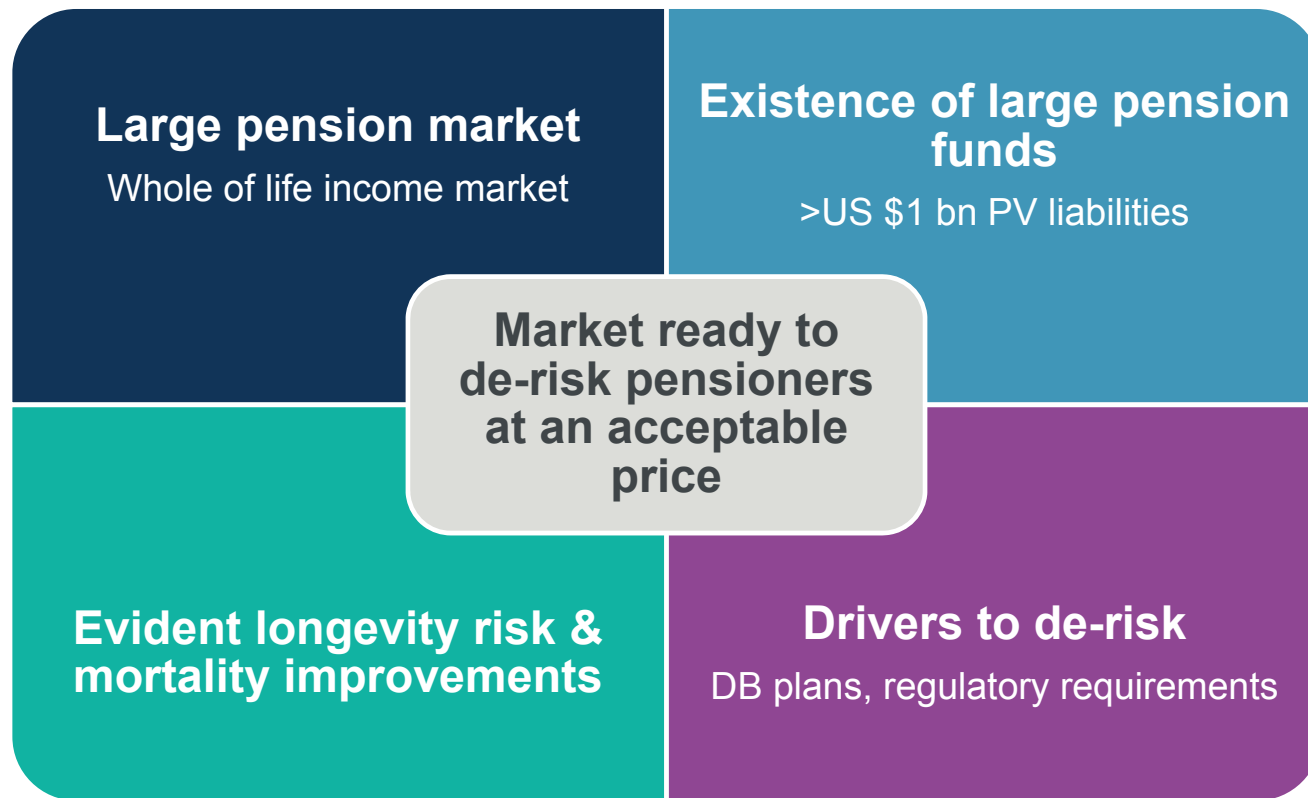


Source: Aon Hewitt calculations based on data from OECD and EIOPA



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Characteristics of an attractive market – reinsurer perspective



Adequate data available to produce suitable basis



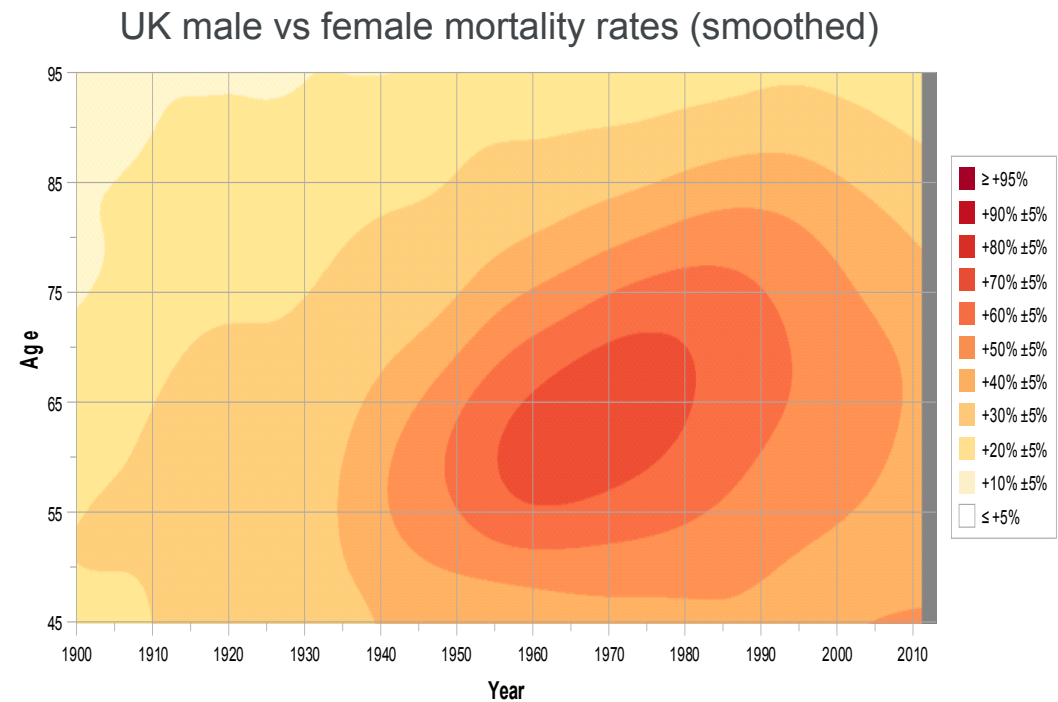
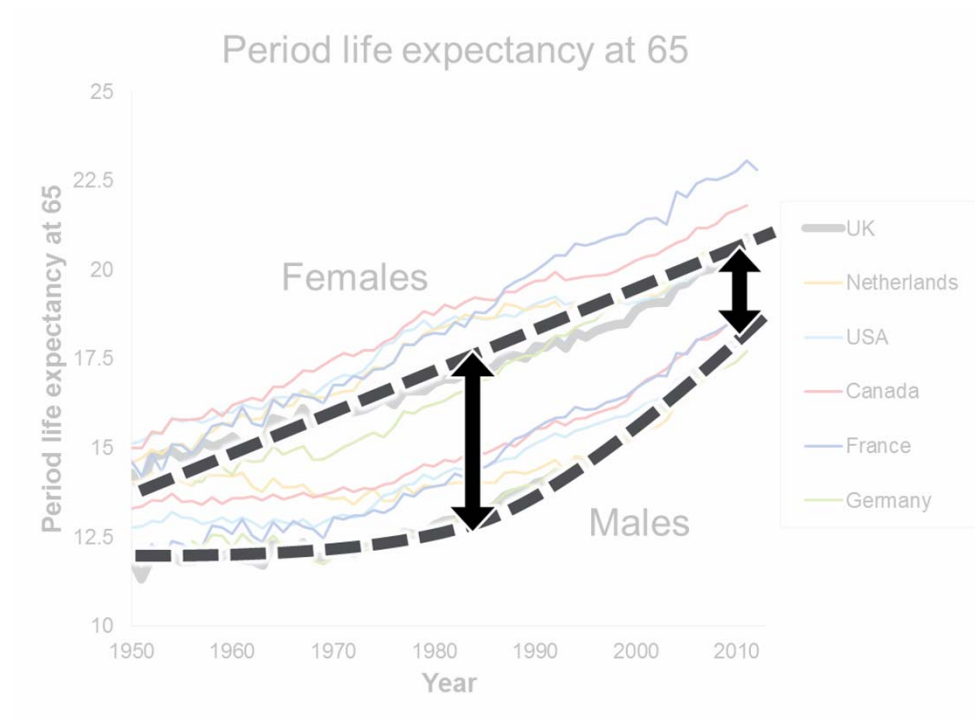
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Is longevity risk universal?

Mortality trends - UK

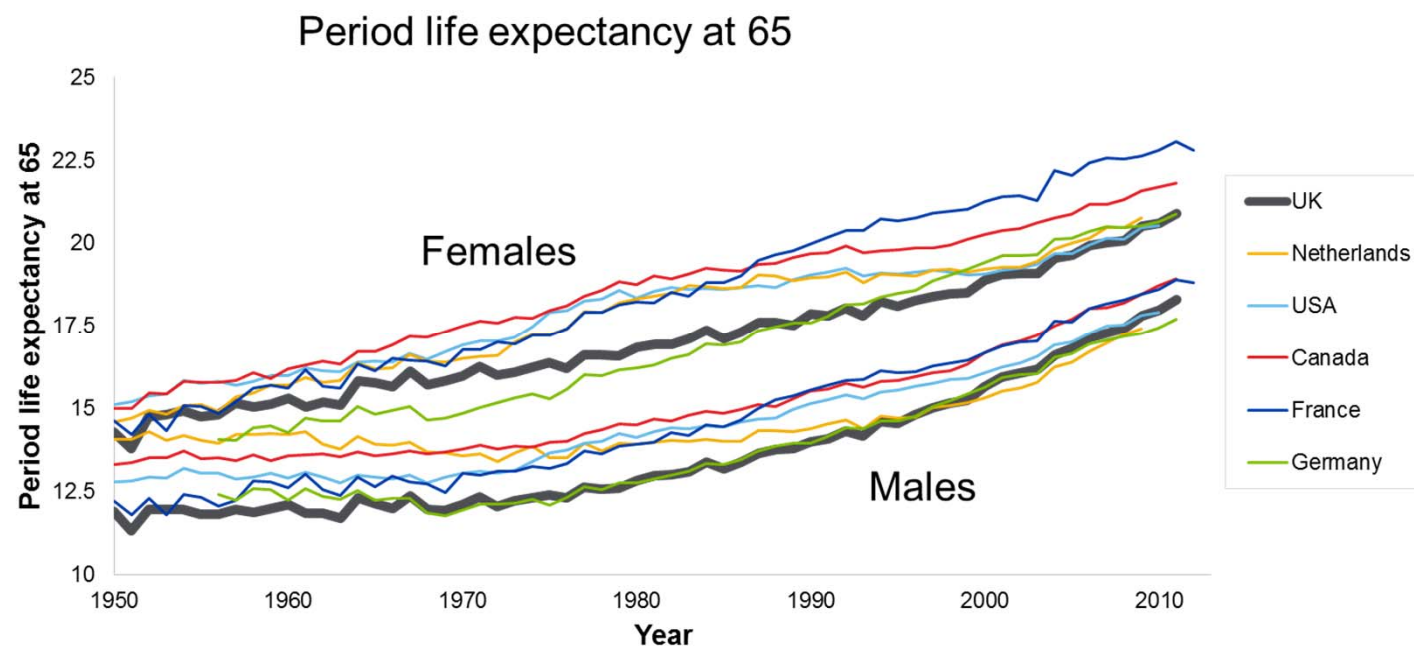


Source: Aon Hewitt calculations based on data from the Human Mortality Database.



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International mortality trends

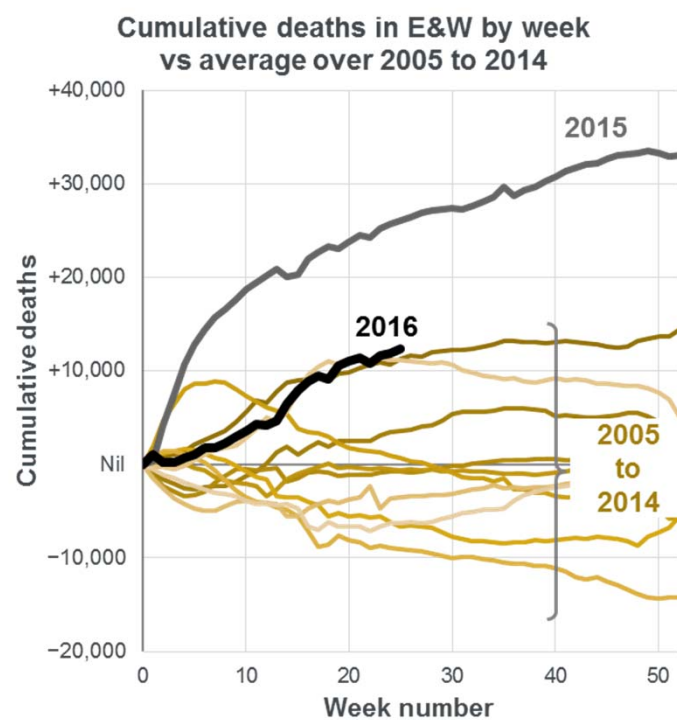


Overall trend towards improvements in life expectancy, different levels of convergence between male and female life expectancies in different countries

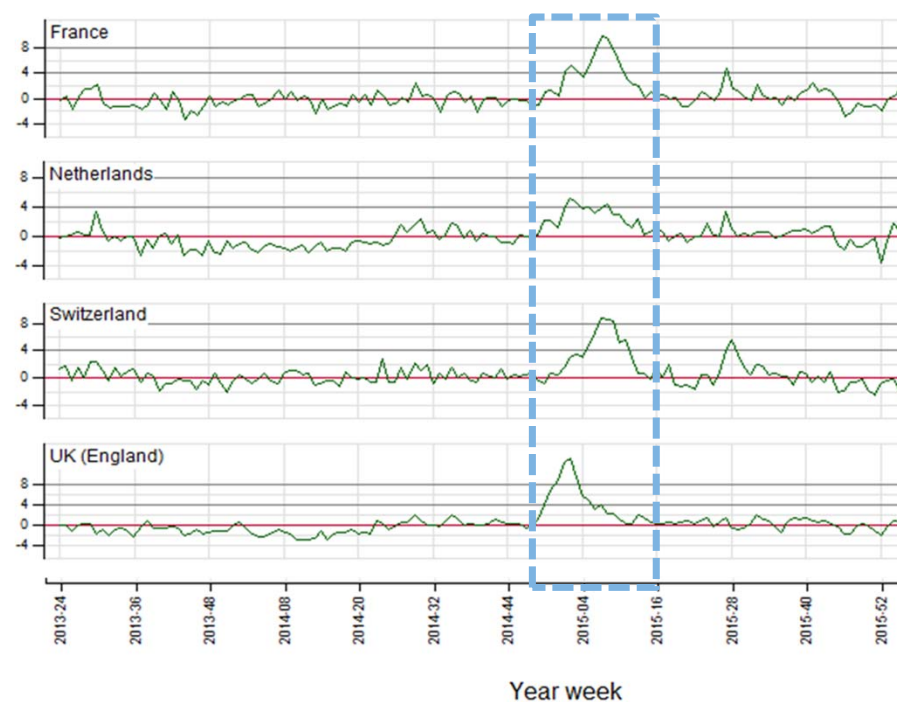


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Emerging mortality data – UK and Europe



Aon Hewitt calculations based on ONS data.



Charts show weekly national mortality for ages 65+ as deviations from a baseline allowing for trend and seasonality.

Source: European monitoring of excess mortality for public health action http://www.euromomo.eu/outputs/zscore_country65.html



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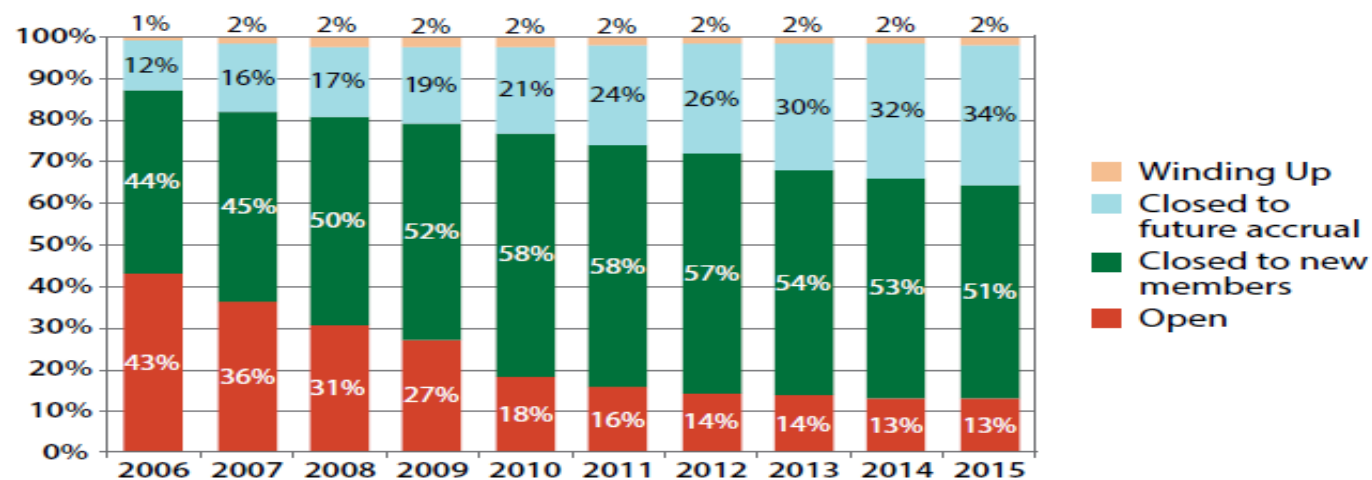
Established markets

The UK



Market

- Significant volume of transactions (deals covering >£50bn of liabilities) and massive opportunity:



Source: 'The Purple Book – DB Pensions Universe Risk Profile 2015' published by the Pension Protection Fund and The Pensions Regulator
http://www.pensionprotectionfund.org.uk/DocumentLibrary/Documents/purple_book_2015.pdf

Basis

- Credible mortality experience data widely available
- Alignment of view between pension schemes and providers on base tables/improvements (i.e. SAPS / postcode models and CMI projection model)



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The UK - evolution

Early market characteristics (pensions)

- Longevity swap transactions begin in 2009
 - Mainly £1bn+
 - Range of providers – Credit Suisse, Rothesay Life, JP Morgan, Deutsche Bank / Abbey Life, Swiss Re, Legal & General, UBS, Nomura, ...
- Variety of contract structures
 - Insurance vs derivative
 - Index based vs indemnity (lives)
- Lengthy transaction times
 - Insurers and reinsurers becoming more familiar with DB pension structures (GMPs etc.)
 - Establishment of collateralisation approaches
 - Negotiation of terms and legal contracts



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The UK - evolution

Recent themes (pensions)

- Standardisation
 - Indemnity only (lives)
 - Consistent collateral structures
 - Common legal terms
- Smaller transaction sizes
 - Pirelli - £600m across two schemes (2016)
 - £50m and £90m undisclosed (2016 and 2015)
- Structures
 - Intermediated
 - Pass through
 - Captive
- Fewer participants
 - Legal & General, Zurich, ???

Recent themes (insurers)

- Pension freedoms & Solvency II
 - Rapid decline of individual annuities
 - Increased volumes of bulk annuities
 - Risk Margin and capital requirements
 - Led to:
 - Sale of annuity back books
 - Reinsurance of longevity risk



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The US



Market

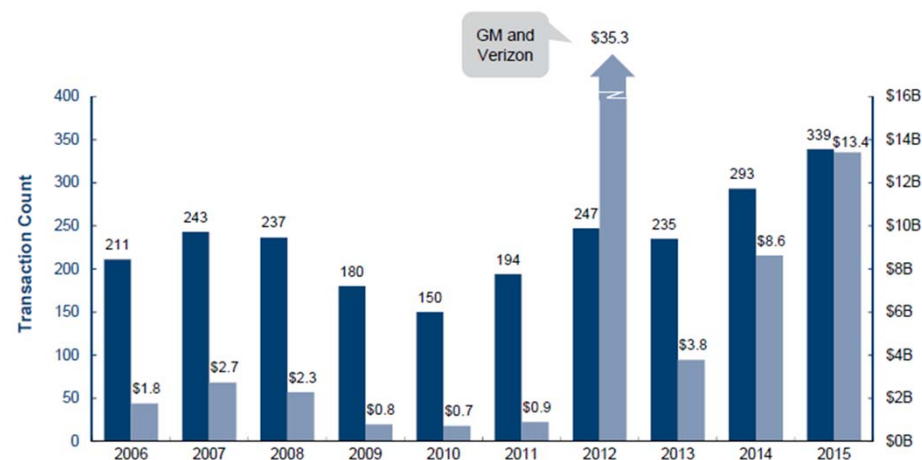
- Huge market for risk settlement
 - \$2tn of defined benefit pension liabilities
- Growing transaction volumes
- Typically pensioner transactions
 - Deferred (terminated vested) pensioners can be paid a lump sum on terms set by the IRS
 - Expect these terms to worsen in 2017 / 18

Basis

- Good data available for mortality base and trend

Opportunity

- Pension schemes transact bulk annuities not longevity swaps partly due to lack of indexation on most pensions in payment but also other drivers
- For larger transactions longevity risk sometimes reinsured



Source: Year-end 2015, as reported in insurer responses to Aon Hewitt Investment Consulting's survey of the most significant U.S. insurers.



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The Netherlands



Market

- Collective culture with large umbrella schemes currently held under insurers
- Longevity risk transfer between insurers and reinsurers becoming more common

Basis

- Good data available for mortality base and trend
- Differing views on life expectancy currently between pension schemes and reinsurers

Opportunity

- Potential for innovative longevity swap solutions for this market – but regulator is cautious
- Limited potential for pension schemes to undertake a longevity swap in current regime

AEGON

Deutsche Bank

Canada Life
Reinsurance

SCOR



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The Netherlands



Regulation

- Q&A published by DNB in June 2016
- Covers index based vs indemnity based contracts
- For an index based swap, capital relief will be proportional to the risk transfer
 - Some previous index based deals the regulator has viewed as being too out-of-the-money
 - Regulators current view is that these deals are too short duration and not a good match for actual liabilities
- Different treatments on balance sheet:
 - Indemnity = reinsurance contract
 - Index = treated as financial instrument
- DNB assess longevity instruments on a case-by-case basis
- Much harder to now complete an index based swap



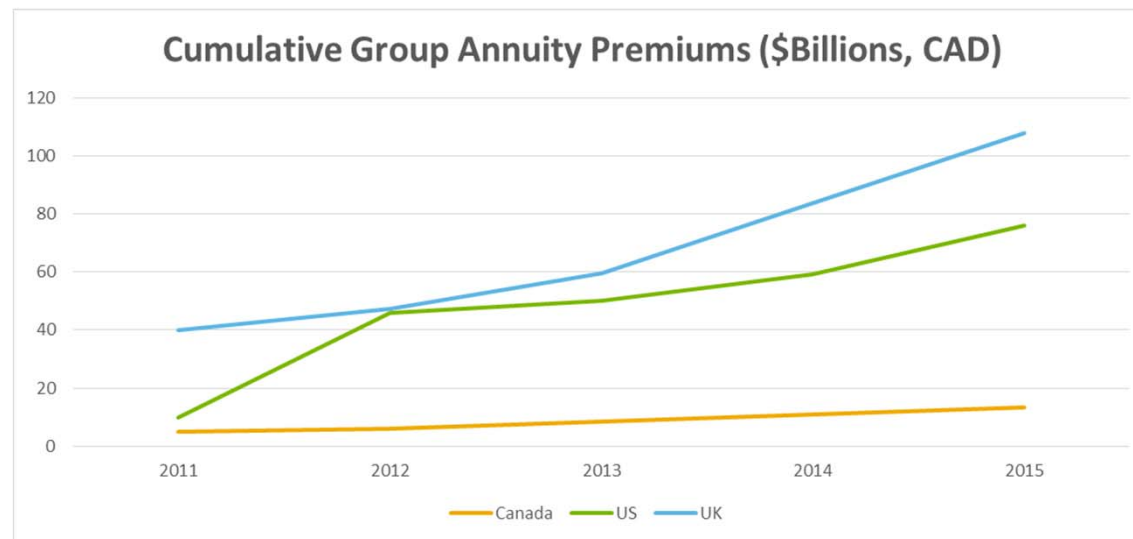
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Canada



Market

- Bulk annuity deals have been ramping up over several years, but levels still low
- 2015 saw record de-risking transactions:
 - Largest bulk annuity deal of ~\$530m written by Sun Life
 - First longevity swap written covering ~\$5bn of liabilities (also with Sun Life)



Source: Aon, U.K and U.S. markets converted to \$CAD at August 26, 2016 exchange rate



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Canada

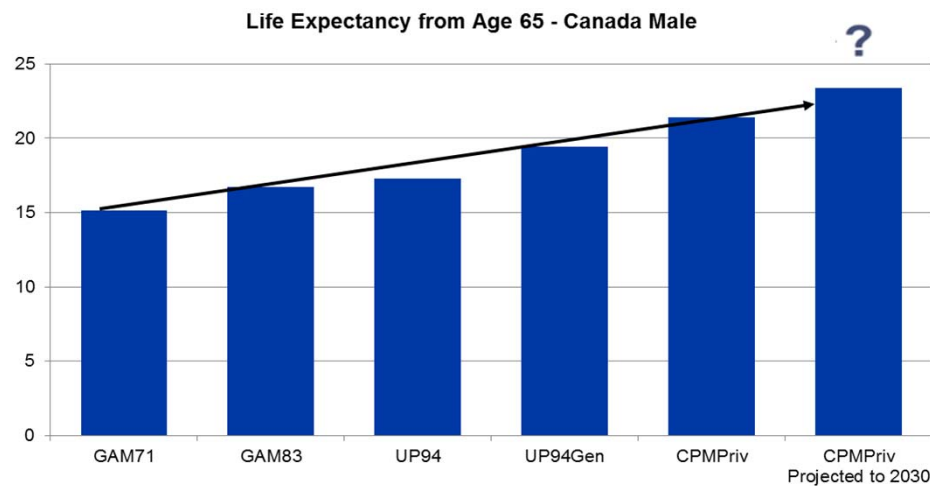


Basis

- Canadian actuarial profession have released mortality tables (and are working on a new series)
- More insurers and reinsurers expected to enter the market and develop Canadian bases
- Pension schemes only tend to reassess mortality after periodic release of new studies

Opportunity

- Market already developing and expectations are for further growth, but at what rate?
- Change in pension scheme approach/cultural view to analysing longevity risk and mortality improvements



Source: Aon Hewitt



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Challenges elsewhere?

Challenges elsewhere?

Germany

- Occupational schemes written onto company balance sheet, no driver to de-risk

Australia

- Generally not whole of life income upon retirement
- Often buy term annuities (20 years) at retirement then rely on the state
- Companies do not bear the risk

Japan

- Low (or negative) mortality improvements worsening longevity
- No value perceived as being gained by longevity de-risking at the moment

Switzerland

- Incentivised to annuitise, but not forced – small market, but one that may open up in the future

South America and South Africa

- Lack of historic data (not reliable or not collected at all)
 - Poor experience data
 - Hard to build a reliable basis







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Conclusions

Select global markets

| |  |  |  |  |
|---|--|---|---|---|
| Characteristic | UK | Canada | Netherlands | US |
| Large pension market | ✓✓✓ | ✓✓ | ? | ✓✓✓ |
| Existence of large DB pension funds | ✓✓✓ | ✓ | ✓ | ✓✓✓ |
| Evident longevity risk and mortality improvements | ✓✓✓ | ✓✓ | ✓✓ | ✓✓ |
| Drivers to de-risk longevity | ✓✓✓ | ✓✓ | ✓✓ | ✓ |
| Market ready to de-risk at an acceptable price | ✓✓✓ | ? | ? | ✓ |
| Adequate data available to produce suitable basis | ✓✓✓ | ✓✓ | ✓✓ | ✓✓ |



Conclusions

UK

- All characteristics of an attractive market are present
- Plenty of life left in the UK market, but currently constrained by human capacity, in future constrained by financial capacity

Other markets

- We believe there could be attractive markets opening up in the future
 - Particularly Canada and the Netherlands
- Longevity swaps in the US unlikely under current regime
- Other markets could emerge
 - Regulation/cultural/economic changes may make new markets become attractive
- However, there are issues in a lot of markets that will be very hard to overcome – from both the demand and supply sides of the market



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Questions

Comments

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