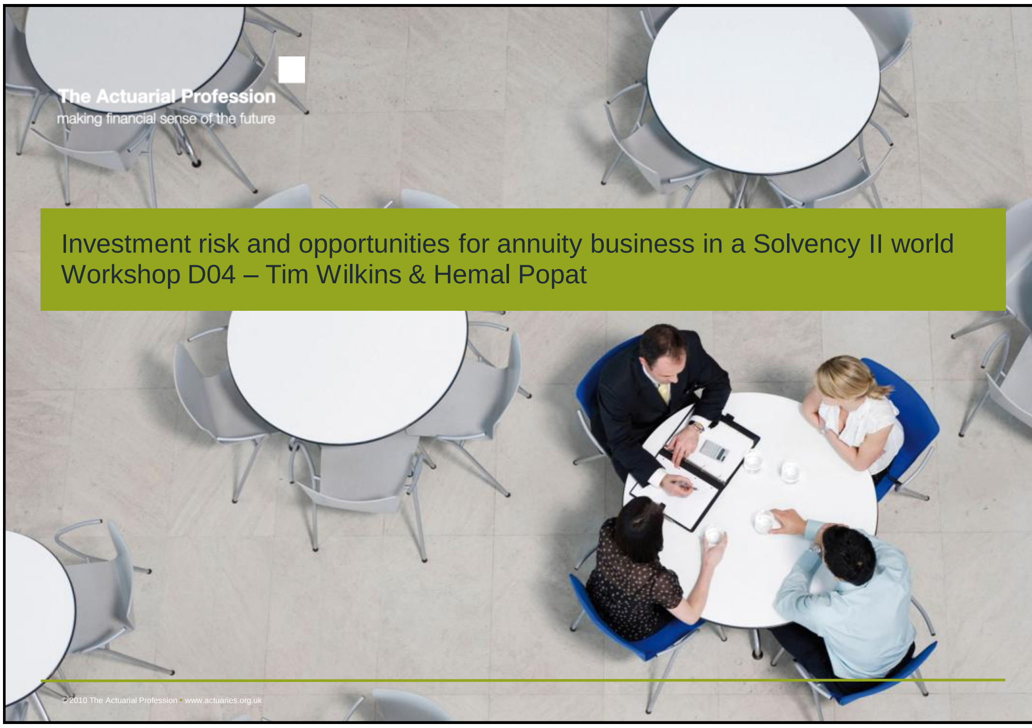



# Investment risk and opportunities for annuity business in a Solvency II world
Workshop D04 – Tim Wilkins & Hemal Popat



## Agenda

- Introduction
- Investment strategy – Solvency II
- Investment strategy – wider considerations

# Scene setting

- Annuities are essential for retirement income, particularly individual provision
  - Provide a hedge for longevity and investment (market) risk
  - Annuities meet a key social by providing pooling for those outside collective schemes
- UK is largest market in the world (absolute and relative)
  - Other major markets include Spain, USA, SA, Chile, Netherlands, Switzerland, Denmark, Canada
- UK annuity funds have been gilts / UK bonds focussed, some real estate. Swaps used to "complete" hedges. Limited use of non-UK bonds, floating rate assets, alternatives, equities – with a few exceptions
- Pillar I and II regime encouraged above due to capital requirements (particularly hold to maturity / allowable yield and localisation concepts)
- Solvency II perhaps moves towards a more economic basis, however
  - Some parts are more economic than others (matching adjustment, countercyclical premium, extrapolation, …)
  - Political debate has a long way to go!





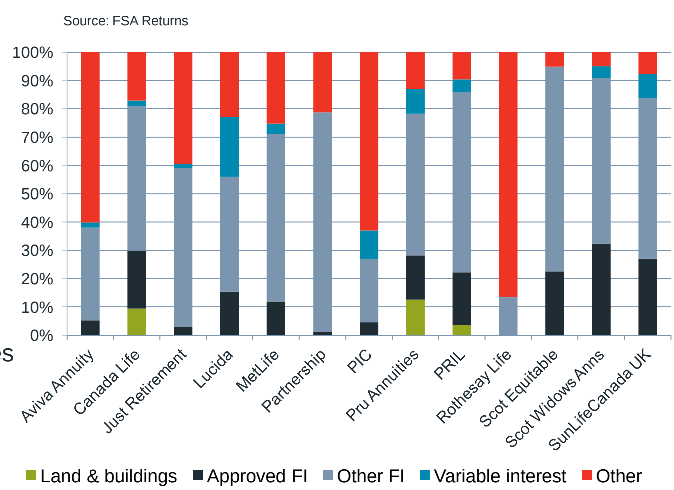
# Annuity portfolios at end 2011

Material proportion of UK corporate bond market

- £45bn of investment grade bonds, cf total c.£300bn

Significant holdings of assets beyond fixed income including:

- Commercial mortgages
- Equity release
- Swaps



## Possible reference rates

**Market is pricing close to 50 bp risk premium in long fixed gilts versus overnight index swaps**

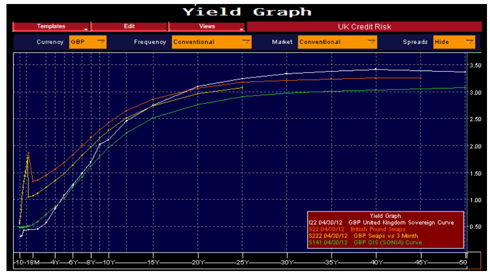
**OIS is below 3m LIBOR – 10bps**

White - fixed gilts

Red – 6 month LIBOR swaps

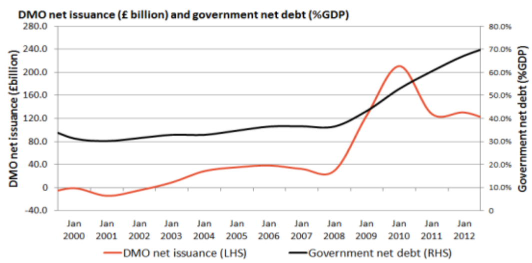
Yellow – 3 month LIBOR swaps

Green – SONIA (OIS) swaps




Source: Bloomberg

**UK government net spending has increased significantly in recent years leading to the risk premium above, increasing gilt volatility relative to swaps**





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## Moving from Solvency I to Solvency II

**Solvency I**

- Two pillar approach
- Liquidity premium
  - Bonds favoured
  - Low yield assets disadvantaged
- Localisation
  - Overseas investment and therefore geographic diversification limited

**Solvency II**

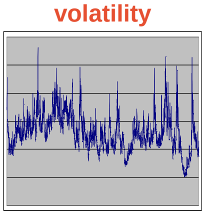
- Risk-based capital, greater MtM volatility
- Optional matching adjustment
  - Retains some features of liquidity premium
  - Dampens impact of credit risk capital requirements
  - Constrains investment universe
- Prudent person principle





## Largest constraint is likely to be cost / amount of capital

**Mark to market volatility**



**One year view**

Solvency and earnings

**Balancing multi-year with one year view**

Mitigate via investment strategy and / or capital buffers?

Alternative approaches:
- Hold a higher capital buffer to absorb short term volatility and focus on long term returns; and
- Reduce short term volatility via better matching / hedging thereby reducing capital, but potentially having less optimal long term returns

## Discount rate issues – current state of play

| Item | Comments |
|---|---|
| **Risk free rate** | Currently still based on LIBOR swaps – central clearing and move to OIS (SONIA) discounting on derivatives (eg cash-collateralised swaps) could cause mismatch risk.<br>Extrapolation: still assumed to be 50y for GBP so less of an issue than EUR where 20y cutoff proposed.<br>Transitional period of 7 years blending from old to new discount rate. |
| **Matching adjustment** | Latest trialogue failed to reach agreement. Expected to survive in some form but details vary between proposals.<br>Scope of application may widen. |
| **Countercyclical premium (adapted risk free rate)** | Expected to survive in some form. Industry is pressing for formulaic approach rather than EIOPA discretion.<br>May only apply to liabilities with duration longer than 7y. |
| **Symmetric adjustment mechanism** | Not in latest proposals. |

Mutually exclusive

Subject to EIOPA review by 2021

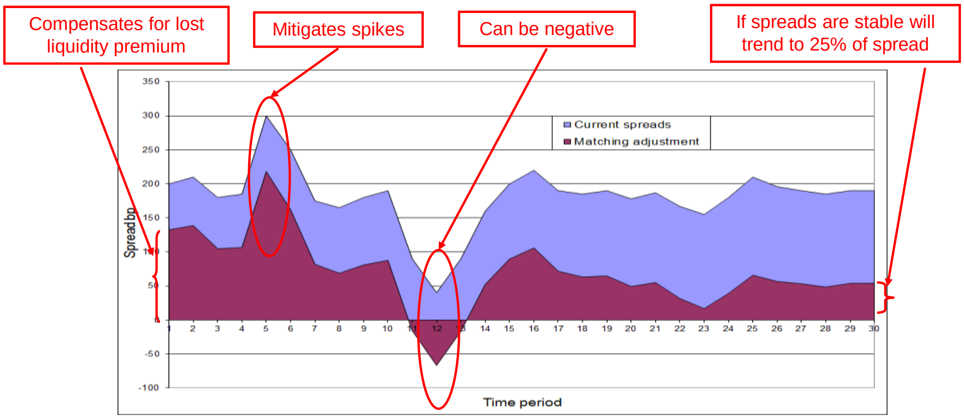




## Matching adjustment: calculation approach

- Buy and hold asset strategy using "bonds and other assets with similar characteristics" that cashflow match projected liability cashflows
- Matching adjustment = current credit spread – fundamental spread
- Fundamental spread:
  - Long term average expected loss on defaults + expected loss on downgrade
  - Subject to a minimum of 75% of long term average credit spreads
- SCR capital calculations likely to need to assume that the fundamental spread increases by a proportion (<100%) of the credit spread stress assumed in stress scenarios, i.e. get a partial offset

## Matching adjustment: characteristics




Effective in mitigating short term spread volatility and the loss of liquidity premium



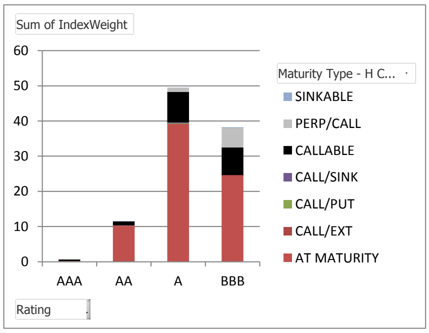


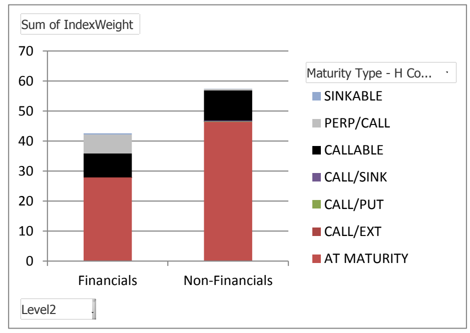
## Matching adjustment: constraints and implications

| Requirement | Implications |
|---|---|
| Assets closely replicate the liability cash flow profile in terms of nature, term and currency | Could significantly change how annuity asset portfolios are managed and reduce attractiveness of certain asset types<br>Could limit investment in assets denominated in foreign currencies, unless FX hedging allowed |
| Assets ring-fenced/assigned and separately managed | Potentially more expensive to manage |
| Contractual asset cash flows need to be fixed (except for a dependence on inflation) and not capable of change by issuers or third parties | Most non-bond assets currently used fail strict interpretation (swaps, mortgages, property) and some bonds also fail (eg callable) |
| No assets below "adequate credit quality", at least investment grade, limit on % in BBB (10%/50% have been proposed) | 10% would be restrictive<br>What happens on downgrade? Unrated assets? |

# UK bond portfolios

- Annuity pools are low activity but there is some portfolio turnover, and they hold bonds with optionality. iBoxx Sterling composition (7 June 2012):



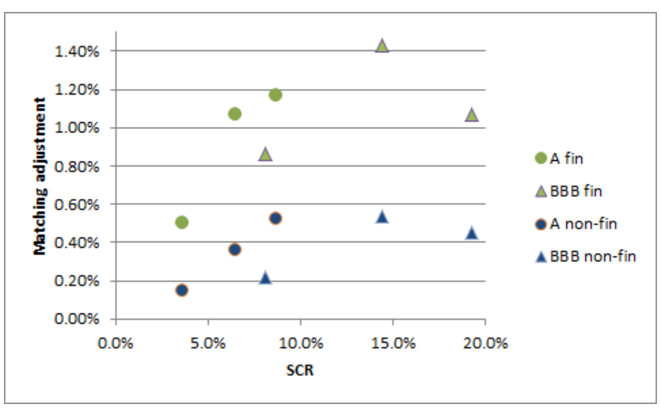




- Potentially issuance will rebalance over time to adapt to changes in insurer demand (but there are supply side reasons too)
- Bond portfolio managers also need to deal with downgrade activity, reinvestment, index changes, etc





# Matching adjustment vs capital requirements




Long term BBB look poor, A financials attractive.
But is this just regulatory arbitrage?

## Conclusions

- Matching adjustment looks attractive for annuity business (lower and more stable capital requirements) and we expect most firms with significant portfolios to adopt it
- However it comes at the cost of significant investment constraints (potentially worse than Solvency I). Non-eligible assets may become cheaper. If capital is not the major constraint, is there an argument for taking a contrarian view?
- Many details of the Solvency II rules remain under debate but some broad principles seem to be emerging and as clarity increases there could be large and very rapid annuity portfolio asset changes with potential first mover advantages
- A cost/benefit analysis now is a sensible preparation, looking at multiple scenarios (different regulatory interpretations) and multiple metrics (not just Solvency II)

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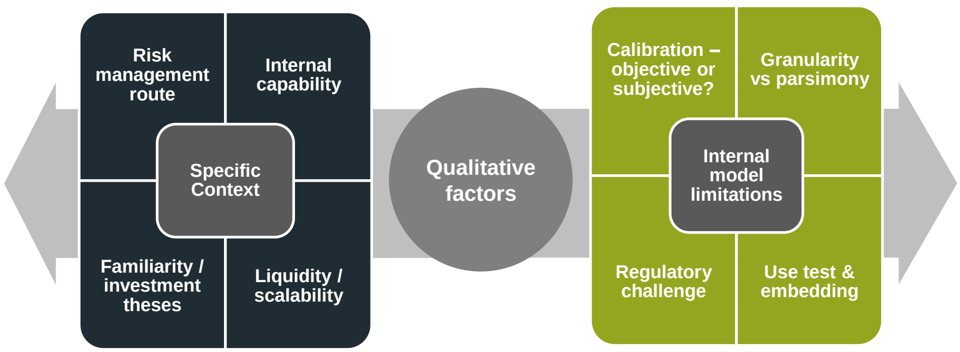
## Beyond capital, constraints will be organisation specific

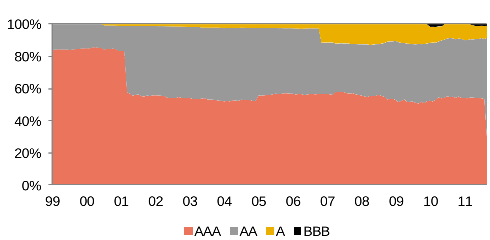


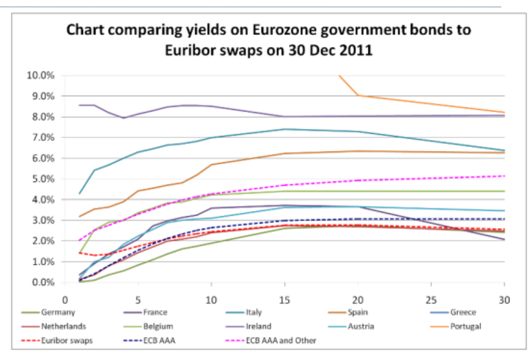





## Reducing supply of high grade assets globally

**Deterioration of DM Credit Quality**
1999 to September 2011

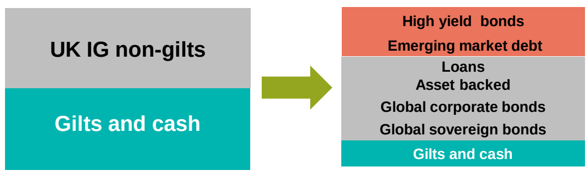


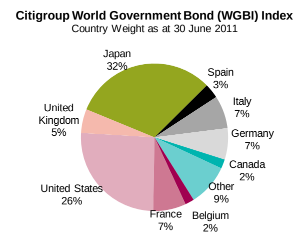

- High grade developed market bonds are in short supply
- UK is AAA/Aaa with a weakening outlook. Despite this, bond yields are very low due to overseas demand (as is US, Switzerland)
- Absent regulatory “encouragement” to hold domestic bonds, one would diversify exposure

## An alternative bond structure

- What you might hold if regulatory capital was truly economic and you were running a low risk portfolio



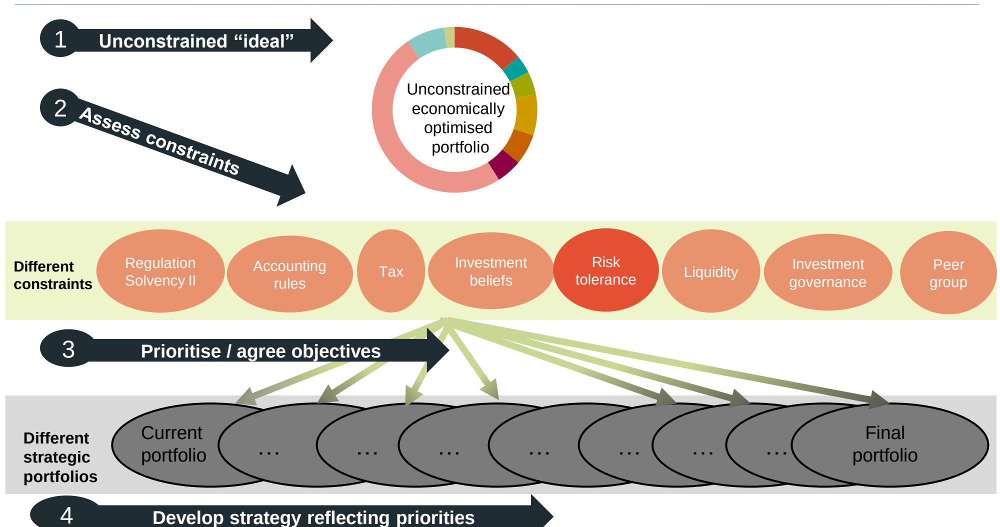

- Are government bonds held for their credit or interest rate exposure?





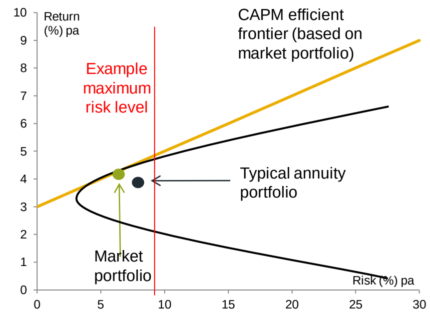



## Resetting the investment strategy



# Investible universe – a useful starting point for a diversified strategy?

- Hold global market cap suitably leveraged for risk/return targets. CAPM / EMH suggests this to be optimal
- However, diversified assets have appreciated relative to equities
- Need to allow for tail dependency to ensure not overpaying for correlation benefit observed in middle of return distribution, and allow for illiquidity appropriately



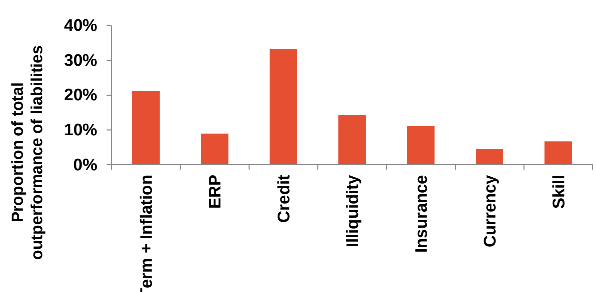






# Viewing assets as risk exposures


Private equity
Commodities
EM equities
Global equities
Global REITs
Real estate
Infrastructure
Reinsurance
Diversified hedge funds
EM debt (hard or soft currency)
EM cash
High yield
Loans
ABS, RMBS
IG corporate bonds
Covered bonds
Supranational bonds
Nominal government bonds
Index-linked government bonds
Cash



## Choosing which asset classes to invest in

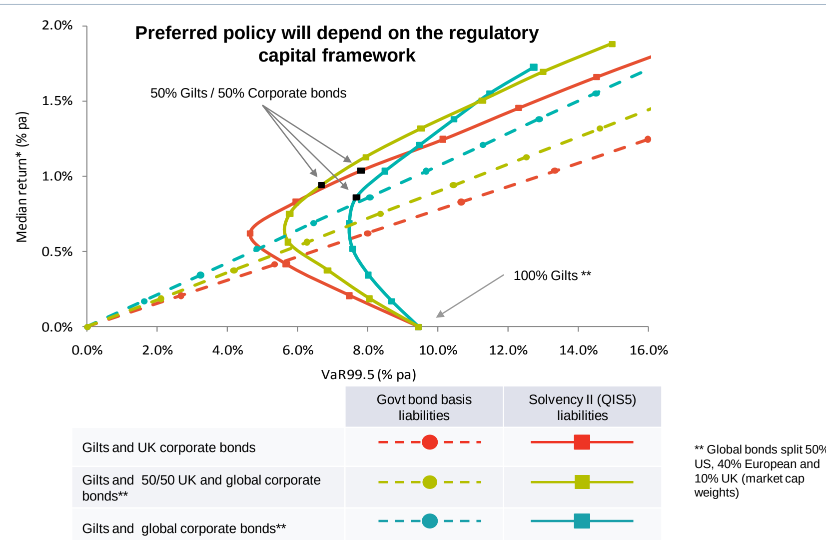
Factors to consider

- **Return distribution**
- **Risk premia accessed**
- **Governance complexity**
- **Liquidity**
- **Implementation constraints**
- **Correlation with market and non-market risks**



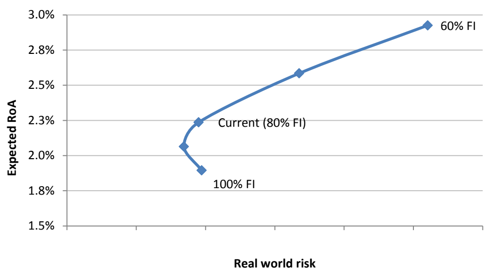


## Some QIS5 modelling

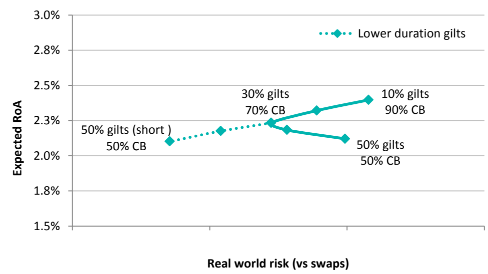


## Will there be greater focus on balance sheet stability than capital?

**Scaling between fixed income / risk assets**




**Scaling between gilts and corporate bonds (and completing hedge using swaps) ***




* Ignores matching adjustment or equivalent



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## Hedging strategy needs to be overlaid onto physical asset portfolio

Which risks should be hedged?

Linear or nonlinear hedging of the risk margin?

How precise should the hedge be?

Is the modelling capability sufficiently granular?

Process, controls and management information

Dynamic or static approaches? Costs vs benefits

How much collateral is needed? Liquidity risk?

Transition of OTC book to CCPs. New exposures only or backloading?



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## Final thoughts – big picture impacts of Solvency II

- Economic considerations and seeking diversification should be the key driver, but in practice return on regulatory capital often dominate
- Corporate bonds still favourable but shorter dated likely to be more favourable due to spread volatility (depending on detail of final regulations)
- Insurers are looking closely at short duration credit or floating rate assets that benefit from "pull to par" at current prices, as well as covered bonds. Bank balance sheet weakness is creating opportunities for insurers
- Government bonds will become less attractive, since spread vs swaps is another source of volatility. Eurozone sovereign debt crisis is testing the risk free assumption
- From an investment standpoint, peripheral Eurozone sovereigns are already impaired. Once the principle is conceded it is not irrational to impose a (small) charge on AAA sovereigns to reflect risk
- For insurers who have a competitive advantage in investment, possibility of holding higher liabilities (on a swap discount rate) and taking more market risk through a diversified and opportunistic investment strategy – or will this only occur at the margins?





## Questions or comments?

Expressions of individual views by members of The Actuarial Profession and its staff are encouraged.

The views expressed in this presentation are those of the presenters.