Personalizing ALM-based investment strategies for default DC members

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About the speaker

- **Brnic Van Wyk**
- Head of Asset Liability Management (ALM)
- Leading the development and governance of QSuper's ALM process for default DC investment objectives and strategies

- **QSuper** (Brisbane, Australia)
- Pension fund for Queensland State Government employees
- 560,000 members (DB, DC, inactive, pensions)
- Internal investment team for ~AUD75 billion DC assets
- Closed DB section (lump sum) ~AUD30 billion (fully funded!)
- Soft compelled 17.75% DC contribution rate (5% member)

Australia‘s Three Pillar System

1. Means-tested Age Pension from age 65 (safety net)
    - Moving to 67 and then maybe 70
2. Compulsory occupational defined contribution system
    - Mandatory employer contributions (currently 9.5% - to go to 12%)
    - Concessionally taxed investment earnings (tax-free in pension phase)
3. Voluntary additional employer and member contributions
    - Concessionally taxed up to certain limits

The Australian dilemma

- Compulsory participation
- Reasonable contribution rates (9.5%, moving to 12%)
- Compulsory preservation

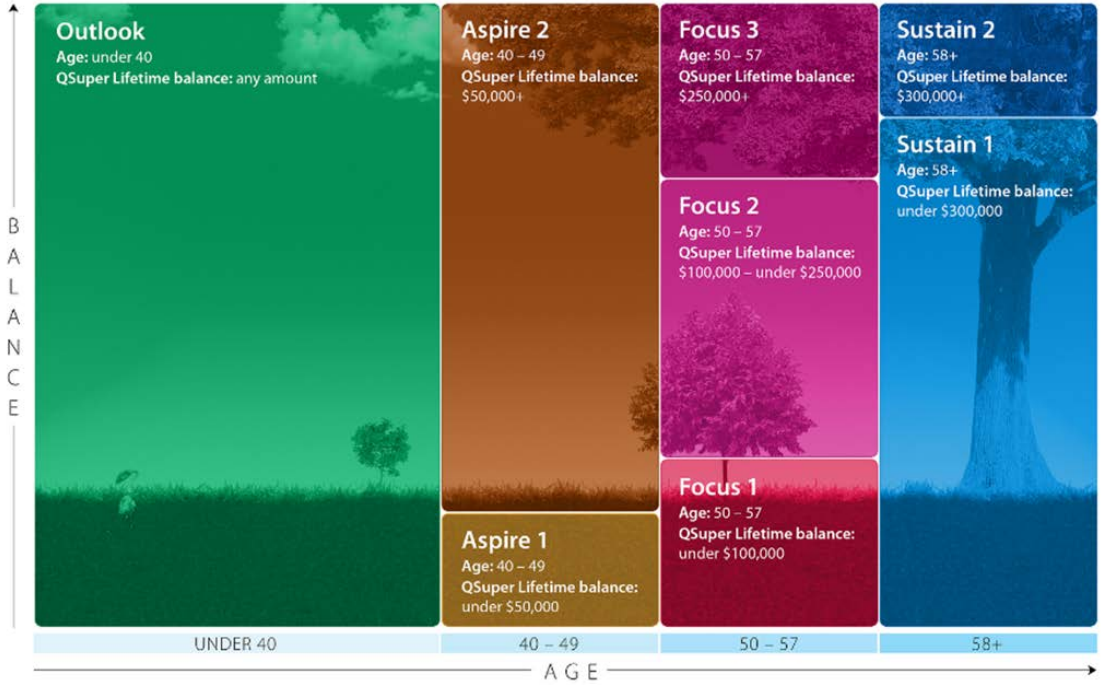
but then…

- Full cash access; tax free at retirement
- No annuity market or risk pooling vehicles
- Complete individualized choice architecture

QSuper‘s ALM Philosophy

- Adapt liability-driven investment (‘LDI’) and ALM methodologies into the defined contribution (‘DC’) risk paradigm
- Move from uncertain lump sum to risk-adjusted retirement income
- Re-define risk as factors that impact on outcomes (not just asset volatility)
- Use individual data (age, savings, salary, contribution, gender) for groupings
- Strategies are a combination of liability (risk) hedging asset pool (‘RHAP’) and optimised growth asset pool (‘GAP’)
- Respond dynamically to changing environment and demographics
- Constrained by regulatory and legislative provisions

Existing structure: *QSuper Lifetime*



Relaxing constraints – the next phase

Existing constraint

- "To" retirement
- Eight groups
- Two factors
  (age and savings)

Proposal

1. "Through" retirement
2. Individualisation
3. Gender differentiation
   (third factor)

1. Hedging “through” retirement

- Refining the objective (“liability”)

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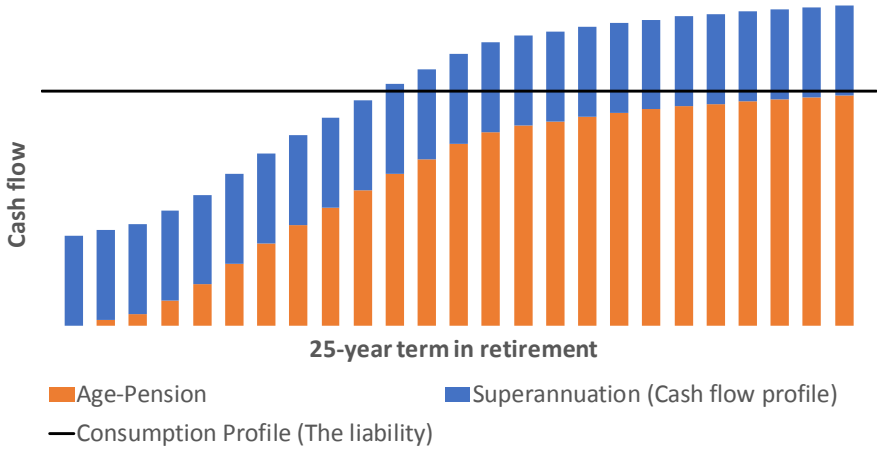

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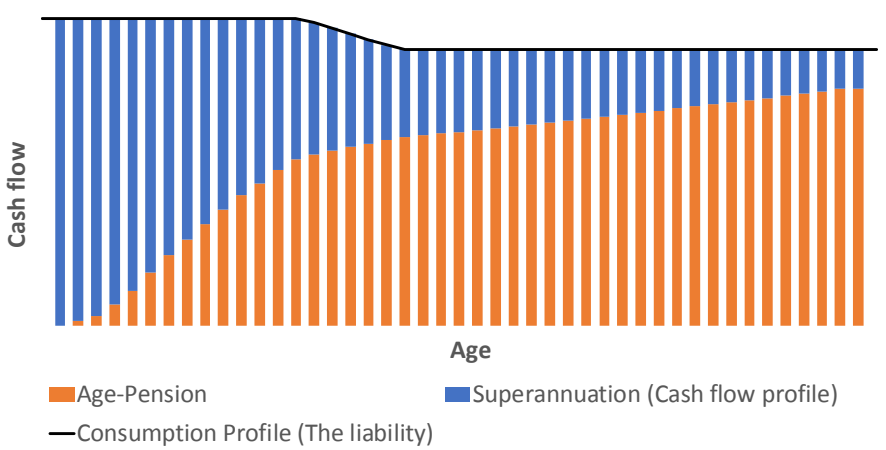
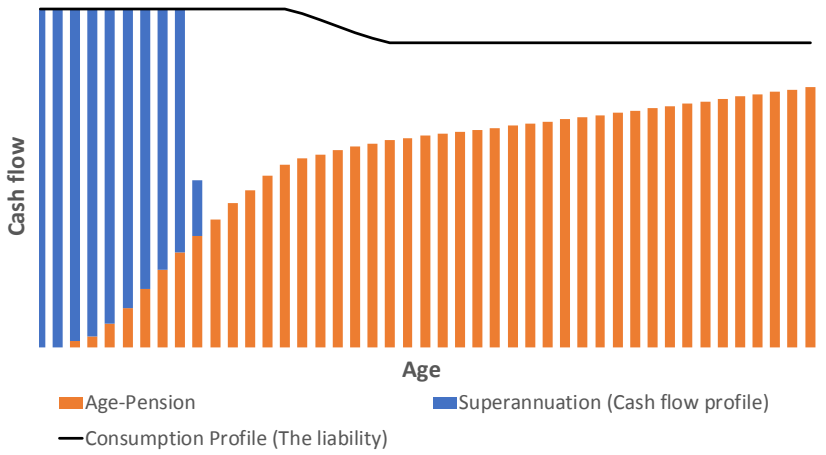
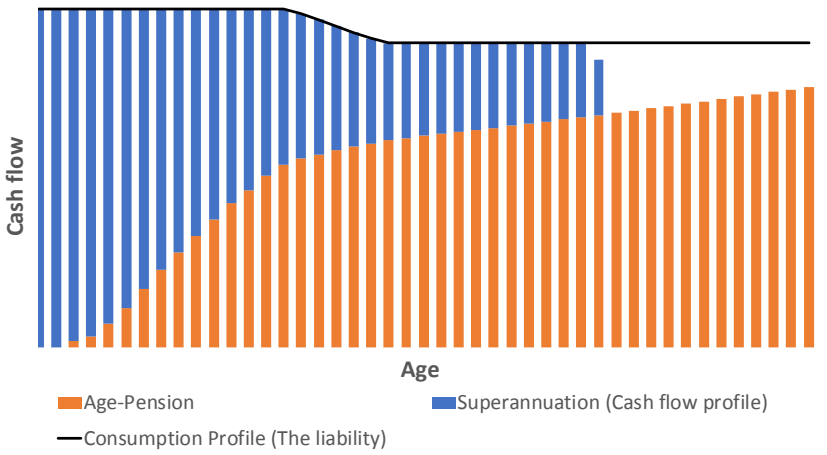


Personalized hedging durations

- Duration of cash flow profile depends on savings at retirement

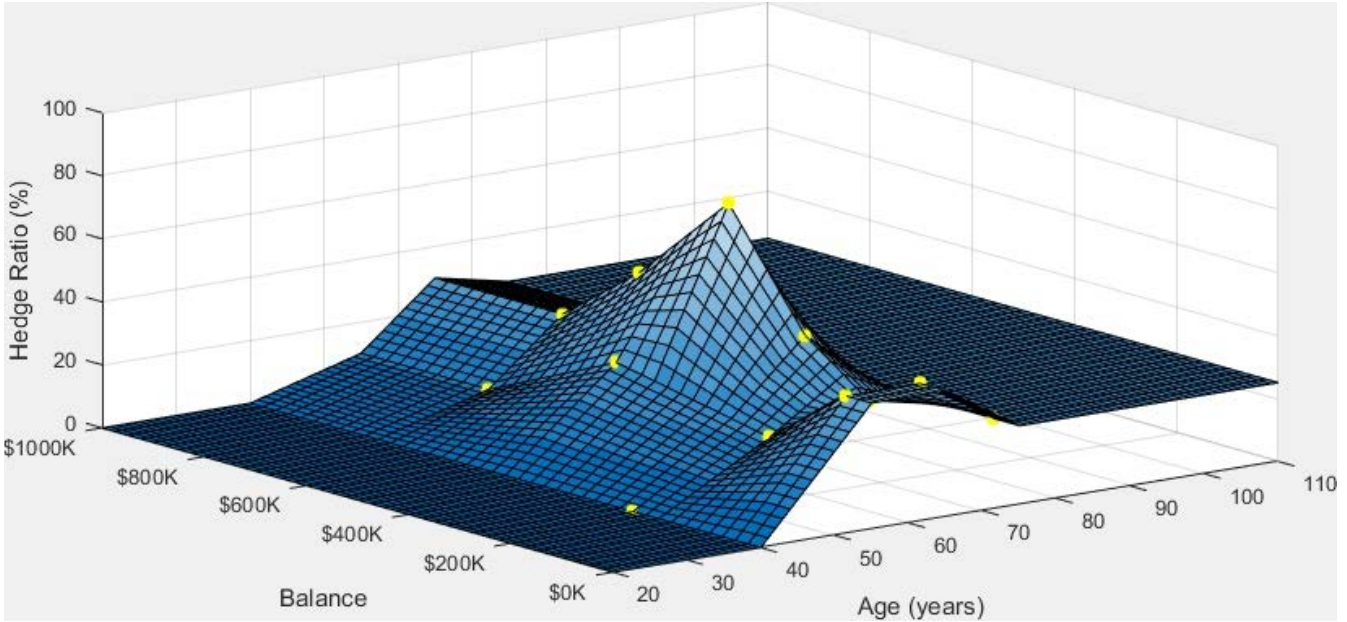




2. Individualising investment strategies

- Select a number of representative “nodes” based on gender, age and savings (account balance)
- Apply proximity techniques to estimate other information
- Use existing ALM methodology to set an investment strategy for each node (i.e. GAP vs duration-based RHAP proportions)
- Interpolate between nodes to create a “surface”
- Allow for extremes in possible permutations of factors
- Convert surface into a lookup table for administration system

Illustrative strategy surface



Two dimensional risk management:

1. Level of hedging

2. Duration of hedge ("through" retirement)

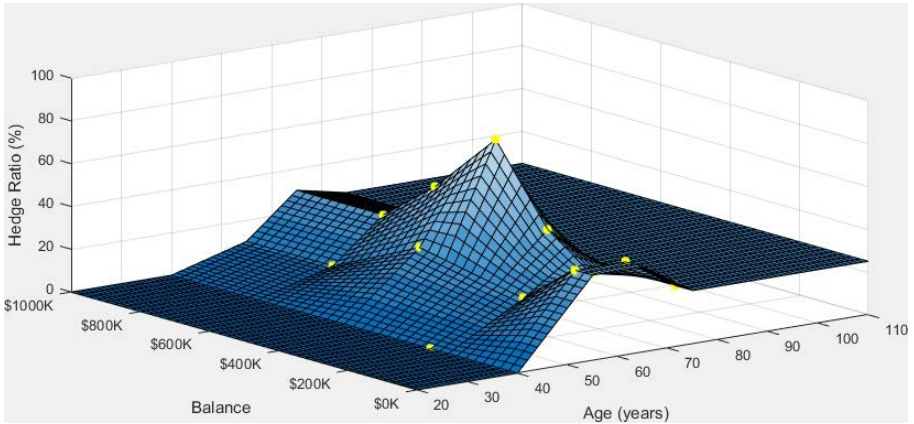
3. Rationale for gender differentiation

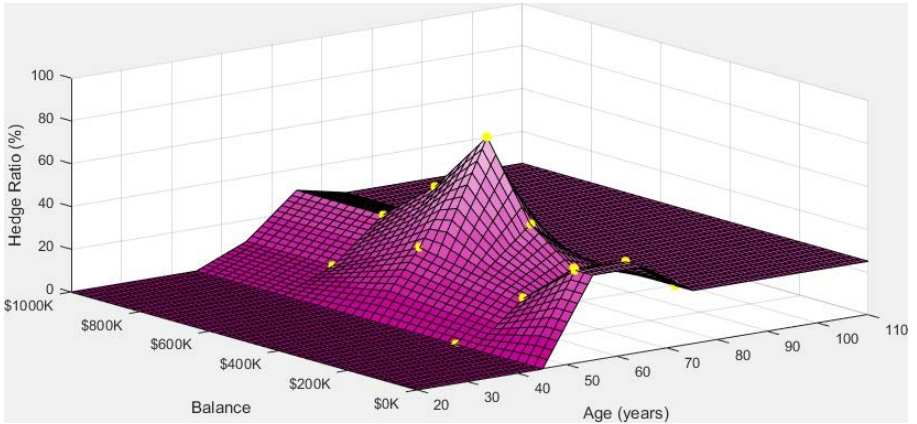
Relative to males of the same age, females on average:

- have lower salaries;
- spend more time out of the workforce;
- or work on a part-time basis;
- have lower accumulated savings; and
- have longer life expectancy.

Gender differentiation introduces key engagement and communication considerations

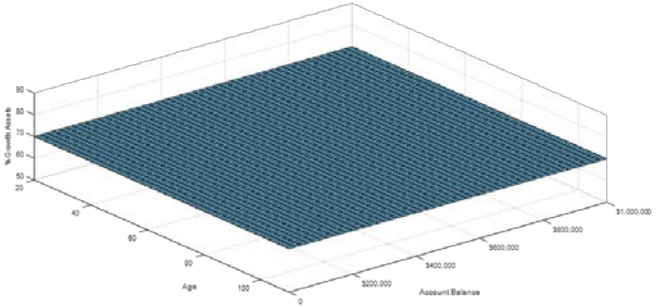
QSuper Lifetime – Individualisation by gender

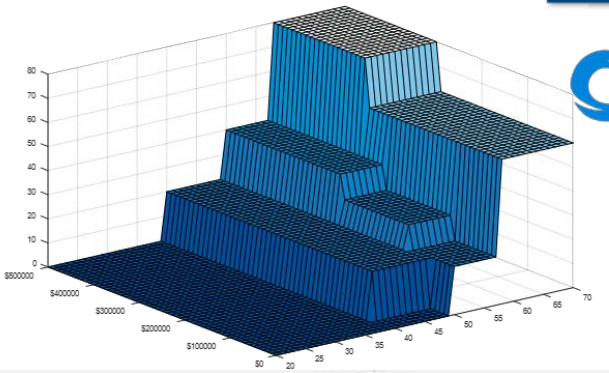


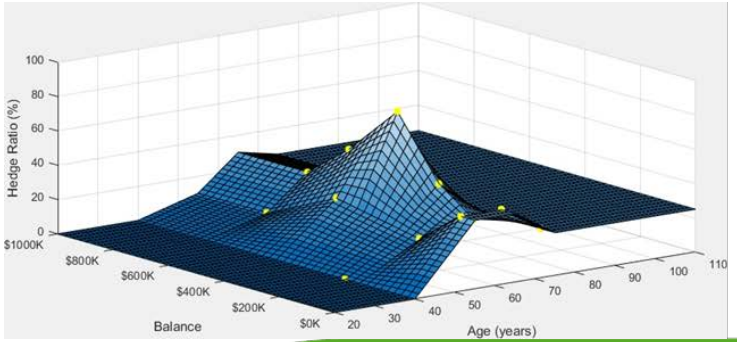


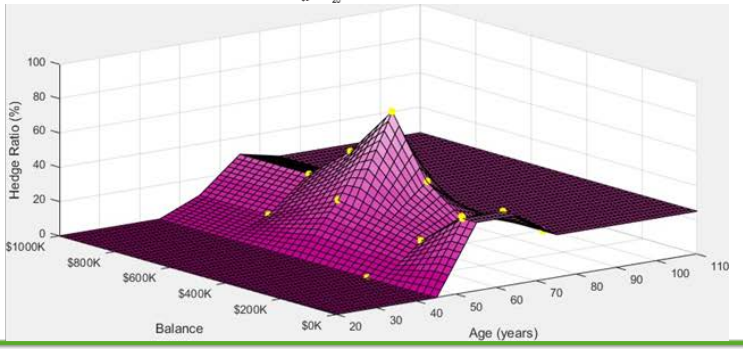
Note: Diagrams are for illustrative purposes only

Evolution of *QSuper Lifetime*









Future considerations

- Longevity component
- Further grouping factors:
  - Contribution rates
  - Term to retirement
  - Salary (individualised objectives)
- Other individual information:
  - Marital status, home ownership, other assets

Conclusion

- ALM has been in place for decades in defined benefit funds
- Applying ALM in defined contribution context hasn't
- ALM tenets provide the basis to develop strategies for changing risks; and to monitor outcomes
- Adjust investment strategies over time; imperfect but better than not adjusting
- QSuper Lifetime remains an evolution; seeking continuous improvement

Thank you very much for your attention!

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