A Market-Linked Annuity

Cepar Superannuation Colloquium

Aaron Minney & Melanie Dunn
1 December 2021
Overview

The annuity puzzle and traditional annuities
What is a market-linked annuity
How does the new market-linked annuity work
Case study: using the market-linked annuity in a portfolio
The traditional annuity puzzle

People do not tend to annuitise as much of their wealth as the economic theory suggests. Various reasons for this observation:

• Bequest motive
• Pre-existing annuitised wealth
• Behavioural biases
• Lack of exposure to high returning assets

The market-linked annuity address the exposure to the underlying investments
Products with market exposure and longevity protection have been launched before, but with limited success in Australia.

Three key legislative changes:

- Innovative Retirement Income Streams (2017)
- DSS changes (2019)
- Retirement Income Covenant (2022)

A maturing super system means that balances at retirement are growing.
Pricing an investment linked annuity

\[ P_x = (1 + \delta) l_x \cdot \frac{n_x}{(1 + \text{AIR})} \sum_{t=1}^{T} \frac{x+t p_x}{(1 + \text{AIR})^{t-1}} \]

Where \( P_x \) is the initial premium amount for the purchase of \( n_x \) units;
\( \delta \) is the loading applied to the annuity price
\( l_x \) is the price of a unit in the underlying investment at time \( x \);
\( T \) is the maximum remaining life (reduced from \( \infty \) for computational efficiency);
\( x+t p_x \) is the probability of survival from age \( x \) to age \( x+t \); and
\( \text{AIR} \) is the assumed interest rate applied to the variable annuity.

The Market-linked annuity

\[ A_x = (1 + \delta) \sum_{t=1}^{T} x+t p_x \]

Where \( A_x \) is the initial premium amount for the purchase of units paying $1; 
\( T \) is the maximum remaining life (reduced from \( \infty \) for computational efficiency); and 
\( x+t p_x \) is the probability of survival from age \( x \) to age \( x+t \).
Alternative paths for different AIR assumptions
Some consumer alternatives

**Cash index**
- 100%
  - AusBond Bank Bill (BAUBIL)

**Conservative balanced index**
- 25%
  - AusBond Bank Bill (BAUBIL)
- 25%
  - AusBond Government (BAGV0)
- 25%
  - MSCI World Net Ex AU (EANREXAN)
- 25%
  - S&P/ASX200 net return index (ASN51)

**Growth index**
- 15%
  - AusBond Government (BAGV0)
- 42.5%
  - MSCI World Net Ex AU (EANREXAN)
- 42.5%
  - S&P/ASX200 net return index (ASN51)
Case study

Market-linked annuity be used in a retirement portfolio

- Male aged 67, $500k in ABP (50% growth), $20k personal assets, spend ASFA comfortable $44,818\(^1\)
- Illustration\(^2\) of current retirement strategy with ABP alone:

1. June quarter 2021 ASFA retirement standard
2. Illustrations completed using Challenger’s retirement income model allowing for Age Pension means tests and target spend of $44,818 p.a. increasing annually with inflation. 2,000 simulations of asset class data provided by Willis Towers Watson (average return net of fees over 40yrs ABP growth 5.3% p.a. (including franking credits) and ABP defensive 1.6% p.a.)

Little longevity protection provided by the ABP alone
How can a market-linked annuity be used in a retirement portfolio

- Invest 30% of super into a MLA with same 50% growth risk profile
- Illustration\(^2\) of retirement strategy when incorporate a MLA:

**Median retirement income**

- **Sustainability of target spend**
  - Low
  - Medium
  - High

<table>
<thead>
<tr>
<th>Age</th>
<th>Retirement income</th>
</tr>
</thead>
<tbody>
<tr>
<td>67</td>
<td>$15,000</td>
</tr>
<tr>
<td>69</td>
<td>$20,000</td>
</tr>
<tr>
<td>71</td>
<td>$25,000</td>
</tr>
<tr>
<td>73</td>
<td>$30,000</td>
</tr>
<tr>
<td>75</td>
<td>$35,000</td>
</tr>
<tr>
<td>77</td>
<td>$40,000</td>
</tr>
</tbody>
</table>

- **Chance can afford target spend to life expectancy**
- **Chance can afford target spend to life expectancy + 3 years**
- **Increased confidence to spend at target lifestyle with longevity protection once ABP does run out**

1. Illustrations completed using Challenger’s retirement income model allowing for Age Pension means tests and target spend of $44,818 p.a. increasing annually with inflation. Lifetime income strategy uses Challenger Lifetime Annuity Flexible Income (Market-linked payments) with conservative balanced payment option, pricing as at 9 November 2021. 2,000 simulations of asset class data provided by Willis Towers Watson (average return net of fees over 40yrs ABP growth 5.3% p.a. (including franking credits) and ABP defensive 1.6% p.a. and conservative balanced payment option 4.3%p.a.)
Case study
How can a market-linked annuity be used in a retirement portfolio

• Lifetime income retirement strategy\(^1\) is robust to market performance:

10\(^{th}\) percentile ‘poor’ income outcomes

\[\begin{array}{c}
\text{Retirement Income} \\
\hline
\text{Age} \\
\hline
67 & 69 & 71 & 73 & 75 & 77 & 79 & 81 & 83 & 85 & 87 & 89 & 91 & 93 & 95 & 97 & 99 & 101 & 103 & 105 \\
\hline
\text{Life expectancy} & \text{ABP only portfolio} & \text{Lifetime portfolio} \\
\end{array}\]

90\(^{th}\) percentile ‘great’ income outcomes

\[\begin{array}{c}
\text{Retirement Income} \\
\hline
\text{Age} \\
\hline
67 & 69 & 71 & 73 & 75 & 77 & 79 & 81 & 83 & 85 & 87 & 89 & 91 & 93 & 95 & 97 & 99 & 101 & 103 & 105 \\
\hline
\text{Life expectancy} & \text{ABP only portfolio} & \text{Lifetime portfolio} \\
\end{array}\]

Income floor in poor and good outcomes higher with lifetime income strategy

---

1. Illustrations completed using Challenger’s retirement income model allowing for Age Pension means tests and target spend of $44,818 p.a. increasing annually with inflation. Lifetime income strategy uses Challenger Lifetime Annuity Flexible Income (Market-linked payments) with conservative balanced payment option, pricing as at 9 November 2021. 2,000 simulations of asset class data provided by Willis Towers Watson (average return net of fees over 40yrs ABP growth 5.3% p.a. (including franking credits) and ABP defensive 1.6% p.a. and conservative balanced payment option 4.3%p.a.)
Disclaimer

Important Notice

The information in this presentation is current as at 19 November 2021 unless otherwise specified and is provided by Challenger Life Company Limited ABN 44 072 486 938, AFSL 234670 (Challenger Life, our, we, us), the issuer of Challenger annuities. The information is general only and has been prepared without taking into account any person's objectives, financial situation or needs. Because of that, each person should, before acting on any such information, consider its appropriateness, having regard to their objectives, financial situation and needs. Each person should obtain and consider the Target Market Determination (TMD) and Product Disclosure Statement (PDS) for the relevant product before making a decision about whether to acquire or continue to hold the relevant product. A copy of the TMD and PDS can be obtained from your financial adviser or www.challenger.com.au. Any examples shown in this presentation are for illustrative purposes only and are not a prediction or guarantee of any particular outcome. The information in this presentation may include statements of opinion, forward looking statements, forecasts or predictions based on current expectations about future events and results. Actual results may be materially different from those shown. This is because outcomes reflect the assumptions made and may be affected by known or unknown risks and uncertainties that are not able to be presently identified. Where information about our products is past performance information, past performance is not a reliable indicator of future performance. Each person should also consider the Statement of Advice prepared by their financial adviser before making an investment decision. Any references to guaranteed payments refer to the payments Challenger Life promises to pay under the relevant policy documents. For market-linked lifetime annuities, only the first year’s monthly income amount is guaranteed. After the first year, monthly payments will move up or down annually adjusting to the changes in your chosen market-linked indexation payment option. In periods of strong market performance, any Age Pension benefits may reduce to reflect the higher income received. Challenger Life is not an authorised deposit-taking institution for the purpose of the Banking Act 1959 (Cth), and its obligations do not represent deposits or liabilities of an authorised deposit-taking institution in the Challenger Group (Challenger ADI) and no Challenger ADI provides a guarantee or otherwise provides assurance in respect of the obligations of Challenger Life. Accordingly, unless specified otherwise, the performance, the repayment of capital and any particular rate of return on your investments are not guaranteed by any Challenger ADI.