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Dear Rebecca

Subject: Retirement Income Disclosure Consultation Paper

Thank you for the opportunity to participate in this consultation process.

Scope of my review

I have focused my review on the proposed approach for calculating income variation with an emphasis on longevity risk.

My background

I am a Fellow of the Institute of Actuaries and a Chartered Enterprise Risk Actuary with over ten years of experience working in the life insurance and retirement sectors both in Australia and the United Kingdom (UK). I have expertise in underwriting of annuities from the perspective of both a direct writer and a reinsurer. My responses have considered what learnings from the UK market may be applicable in Australia.

Key points from my review

- There may be a simpler way to calculate income variation than using a stochastic model. Retirement products differ in terms of product characteristics and level of transfer of risk from the retiree to the provider. Assigning a risk rating based on these features would be easier to understand and is more transparent, objective, and comparable across the market.
- Individual retirees have different utility curves and so are likely to value longevity, market and inflation risks differently. Bundling the three risks together into one income variation risk score may result in misleading conclusions. Given longevity does not naturally group with market related risks, then it makes sense to present risk scores separately rather than in aggregate.
- A discussion of how income might change under a range of relevant scenarios, from favourable through to adverse, could help to bring to life the risks that a retiree may face, along with illustrating the ways different risks interact in real life.
- Similarly, inclusion of information about the amount by which investment returns, inflation, longevity, or a combination of these would need to change for income to be exhausted (or fall below a critical level, e.g. aged pension) would provide an alternative way to view risks.

Please do not hesitate to contact me at [redacted] should you wish to discuss my submission further. I look forward to hearing from you.

Yours sincerely

Georgina Hemmings

FIAA, CERA

Retirement Income Disclosure Consultation Paper

The proposed approach

Proposed approach: Calculating income variation

For all retirement income products, income variation should focus on negative or downside variation measures against expected first year real income. The model measures downside income variations and the size of variations.

Products with risk mitigation strategies, protection factors, or conservative investment strategies, create fewer downside variations and therefore have lower risk scores.

A goal of the Retirement Income Fact Sheet is to *"enable customers to find and compare information about income, risk and flexibility associated with different products."*[1]

Balancing the need to design a risk measure that is easy to interpret that communicates the potential implications if the future is not as expected is not a simple task!

I understand that the proposed approach is to

- translate the risk measure, $\sigma = \sqrt{\sum_1^n x^2/(n-1)}$, as detailed by the Australian Government Actuary,[2] into a seven point scale of income security and
- to provide a graph showing real income over a lifetime between the 5% and 95% percentiles.

How could the proposed approach not meet its goal and what can Treasury do about it?

I have focused my review on the proposed approach for calculating income variation with an emphasis on longevity risk.

The two tables below summarise some potential issues that I see with the proposed approach. Where possible, I have provided possible solutions.

In developing these solutions, I have considering how the principles underlying the European Union's (EU's) technical standard for key information documents for packaged retail and insurance-based investment products (PRIIPs) could apply in an Australian context.[3] A brief overview of this technical standard is provided in Appendix 1.

[1] Australian Government, The Treasury, Retirement Income Disclosure Consultation Paper, p3.
[2] https://static.treasury.gov.au/uploads/sites/1/2018/12/Retirement-Income-Risk-Measure-FINAL-Consultation-1.pdf
[3] https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1516899203728&uri=CELEX:02017R0653-20170412

An alternative approach

The table below provides an alternative way to present income variation rather than the proposed approach.

Issue	Potential solution
Assumptions underpinning the analysis A stochastically generated risk score is based on a range of assumptions. The actual risk of negative variation could be higher or lower than indicated. For example, the effectiveness of pooled mortality risk products at protecting against diversifiable (i.e. random variation) longevity risk is dependent on assumptions about the size of the pool. Similarly, the risk that the entire pool of lives longer than expected (i.e. non-diversifiable longevity risk) is dependent on assumptions about future mortality improvements. A recent paper commissioned by the Actuaries Institute highlights the lack of credible data to develop a mortality table and improvement factors for Australian annuitants.[4] The authors instead considered how to adjust Australian population tables based on UK annuitant data. It is important to bear in mind that Australia is likely to offer much greater freedom to choose not to annuitize than the UK did in the past. Caution therefore needs to be taken when applying differences between UK annuitants and the UK population to Australians.	The choice of distribution and assumptions underpinning a stochastic model can yield materially different results for long tail products. Given the infancy of the Australian retirement incomes market and the absence of credible data on annuitant mortality, the risk of actual income differing from modelled income is an important consideration. Given this uncertainty, Treasury may like to consider simplifying its approach. Instead of relying on a stochastic model, providers could derive risk ratings from both product features and the degree to which risk is transferred from the retiree to the provider. An illustration of expected or "average" income projected over a lifetime could still be presented, if needed, but without the best (5%) and worst (95%) outcomes. This is easier to understand and is more transparent, objective, and comparable across the market. It would also be simpler for providers to calculate.

[4] https://www.actuaries.asn.au/Library/Opinion/2018/AIExploringRetireeMortalityFINAL.pdf

Life expectancies for those who purchase products that protect against longevity risk are unlikely to be the same as the general population. This is because lives who know they are in ill health are less likely to opt in to a product that protects against living longer than expected. While there will still be random variation in life expectancies amongst this select group is it unknown whether the distribution will be normal.	As an example, if we refer to the EU framework, credit risk is assessed by mapping known credit quality steps to a six point scale. For market risk, products are assigned to one of four categories based on product features. The approach used to determine ratings on a seven point scale depends on the category to which the product has been assigned. This has the effect of narrowing the scope for variation for certain products whose level of "riskiness" is known. Applying this to the measurement of longevity risk in an Australian context, products could be ranked on a multi-point scale based on their level of longevity protection. For example, an account-based pension might be allocated a score of zero, whereas a lifetime annuity would obtain a full score as longevity risk is eliminated. Group self-annuitisation pools would fall somewhere in between.
Unbundling of risks Combining market fluctuations, longevity and inflation risk into the one calculation makes an implicit assumption that consumers value these risks equally. This could be misleading. To demonstrate this, based on the Australian Government Actuary's preliminary modelling, a non-indexed lifetime annuity with an initial income of $7,232 has a risk measure of 36.28 whereas an account-based pension invested in growth assets and with an initial income of $5,000 has a risk score of 14.56.[5] This difference appears to be driven by the impact of inflation, particularly as there is no discounting in the calculation. While on the face of it, this suggests that an account-based pension is less risky, for	Given longevity and market or inflation risks do not naturally group together then it is recommended that risk ratings be unbundled. Unbundling would increase transparency and allow retirees to assign an individual importance to each risk. This would also help to simply the way risk is communicated. In doing so this might help retirees to compare products across the market as the process would be more transparent.

[5] Australian Government Actuary, Retirement Income Risk Measure. p12.

an individual seeking a guaranteed income for life, then the risk score would lead them to an inappropriate conclusion. Further, it is possible that an individual with knowledge of their "good" health may be more willing to accept market fluctuations than someone in "poor" health, who might expect to die earlier than the average and so have less time for their account balance to be restored.	Should Treasury seek to provide an aggregated rating then a prescribed matrix could be used to combine rankings for each risk. The EU has adopted this approach in its technical standard for combining market and credit risks.
Encouraging retirees to "compare the market" It is not unreasonable to expect risk scores for similar products to vary across the market where the calculation is based on own assumptions. Assumptions may be commercially sensitive which may place limitations on disclosures. Variation in risk scores where the underlying inputs are not transparent will make it difficult for retirees to confidently compare products across the market. This could encourage inertia whereby retirees remain with their existing superannuation provider rather than seeking a better outcome elsewhere in the market.	Australia could look to the United Kingdom (UK)'s Open Market Offer campaign as a case study on how to encourage retirees to shop around. In 2013 the UK Financial Conduct Authority (FCA) undertook a thematic review of annuities and found that that majority of consumers (60%) purchased an annuity from their existing pension (akin to a superannuation) provider even though an estimated 80% of these consumers could have got a better deal through the open market.[6] A few players in the UK underwrite annuities which is a key reason why shopping around can offer material savings for some retirees, particularly those in ill health. According to the Association of British Insurers (ABI), the reasons British retirees do not shop around include customer satisfaction, trust and perceived good reputation of their existing provider for financially astute retirees and complexity of information and low confidence for those less

[6] https://www.fca.org.uk/publications/thematic-reviews/tr14-2-–-thematic-review-annuities

	financially savvy. For others, the reason was the perceived hassle of switching or having a small account balance. [7] Drawing from the UK case study, • Clear and transparent information about the importance of shopping around could be provided in the Retirement Income Fact Sheet or supplementary material. • Retirement income product comparison websites should provide information that is fair, clear and not misleading.[8] • An industry Code of Conduct could be used to provide guidance to providers on expectations regarding communicating with retirees about their choices. • An independent, industry body could monitor overall effectiveness at ensuring retirees are aware of and are exercising their options.
What if and real life scenarios Does the proposed approach provide retirees with enough information to be able to understand and apply the risk metrics to their personal circumstances to make informed decisions?	Presentation of how income might change across a range of relevant scenarios in the Fact Sheet could help to bring to life the risks that a retiree may face, along with illustrating the ways different risks interact in real life. Scenario analysis could also be used to demonstrate the interplay between access to capital and income variation. As an example, EU standards require disclosure of four scenarios, ranging from a favourable through to a stressed outcome. Similarly, applying the principles of reverse stress testing, inclusion of information about the amount by which investment returns, inflation,

[7] https://www.abi.org.uk/globalassets/sitecore/files/documents/publications/public/2014/pensions/retirement-choices-measuring-the-effectiveness-of-the-code-of-conduct-following-its-implementation.pdf

[8] https://www.fca.org.uk/publication/guidance-consultation/gc14-01.pdf

	longevity, or a combination of these would need to change for income to be exhausted (or fall below a critical level, e.g. aged pension) would provide an alternative way to view risk. An option may be to assess how products would have performed in two or three recent scenarios from the past. Treasury has indicated that it will undertake consumer testing following this consultation process. This testing provides an opportunity to road test the types of real-life scenarios that would be most useful to retirees.

Other considerations

Should Treasury continue with the approach of modelling income variation, or components of it, using a stochastic model, then I have provided some additional considerations.

Issue	Potential solution
Risk has an upside and downside There is both an upside and downside to risk. While some consumers are known to be loss averse, a risk metric that only measures the likelihood of negative variation is not a balance representation. It may also encourage retirees to be too cautious as the assessment of risk is not giving credit to the upside. For example, actual income in excess of expected income could be used as a buffer during periods where there is a shortfall. Recognising this would reduce a product's perceived risk score. Also, the Institute and Faculty of Actuaries' Continuous Mortality Investigation (CMI) has recently published findings which support a reduction in life expectancies for the UK population by around 6 months.[9] The CMI observed that the rate at which mortality has been improving has slowed compared to earlier in this century. Time will tell if the factors that have driven this are applicable in Australia, however it might be helpful for retirees to understand the outcome if this trend materialised here.	The inclusion of a favourable scenario (as discussed above) and/or a scenario of people dying earlier than expected might help to provide a more balanced representation. Also, it may be a worthwhile exercise to perform some testing to see how different retirement products are ranked on a seven point scale when positive variations are allowed for in the calculation. This would help to resolve the question as to whether only considering negative variations leads to meaningful conclusions.

[9] http://www.theactuary.com/news/2019/03/falling-life-expectancy-to-slash-pension-scheme-liabilities/

Standardisation of assumptions It is not clear how the assumptions underpinning the determination of income will be determined.	Using a set of prescribed assumptions to calculate income would increase transparency and aid comparisons across the market.
Discounting The Australian Government Actuary has made an explicit decision to not allow for the probability of survival in the calculation of the risk measure. Similarly, the risk measure does not allow for the time value of money. The impact of this is that income variation that is expected to occur well into the future carries the same weight as a variation in income which might occur tomorrow. To give equal weighting to deviations today versus 30 years into the future is subjective. In the advanced stages of life, deviations may be less important, for example where an individual has moved into government subsidised aged care.	There may be value in Treasury testing to see how products are ranked on the seven point scale when the risk measure allows for both the time value of money and the probability of survival.
First year's income and needs The use of first year's income, indexed for inflation, as the baseline measure does not allow for the fact that income needs can vary over retirement. While actual income may fall below the benchmark, if a retiree's income needs have reduced then they may still be able to cover their expenses. Conversely, if expenses increase significantly during retirement, for example due to aged care costs, then the risk score does not capture the fact that the baseline itself may no longer be adequate.	A statement that needs may change over retirement and that, over time, the baseline level of income may not suit your changing circumstances may help to address this.

Credit risk The derivation of an income variation considers market, inflation and longevity risk. It does not appear to allow for credit risk. Credit worthiness and risk of default is a consideration where income is fully or partially guaranteed.	Treasury should consider how to disclose other risks which may impact income variation that are not include in the calculations. This could be addressed in the narrative.
Age limits The age at which the projection will ceases is not clear from Treasury's Disclosure Consultation Paper and The Australian Government Actuary's Retirement Income Risk Measure paper. A graphical presentation to age 97 or 100 years in Treasury's and the Australian Government Actuary's presentations does not demonstrate the benefit of products, such as lifetime annuities, which continue to pay past this age.	Where possible, modelling and graphs should cover the life of the product.

Appendix 1 -EU Technical Standard for Packaged Retail and Insurance-Based Investment Products

The technical standard for key information documents for packaged retail and insurance-based investment products (PRIIPs) published by the European Union (EU) requires European firms to prepare a Key Information Document. [10]

The standard includes a prescribed template which covers

- What is the product?
- What are the risk and what could I get in return?
- What happens if the provider is unable to pay out?
- What are the costs?
- How long should I hold it and can I take money out early?
- How can I complain?
- Other relevant information.

In the risk and returns section, European firms are required to calculate a summary risk indicator and performance scenarios in accordance with prescribed rules.

The summary risk indicator is based on market and credit risk. For market risk, PRIIPs are allocated into four categories based on certain product features. Depending on the category, the product is either automatically assigned a risk rating or is assigned based on a Value-at-Risk (VaR) equivalent volatility (VEV) calculation. Mapping of VEV ranges to the seven point scale is prescribed. For credit risk, credit quality steps (which cover ratings from AAA to CCC and below) have been mapped to a six point scale. A matrix for combining market and credit risk ranking into a seven point risk rating score is prescribed.

For the performance scenarios section, providers are required to demonstrate possible returns based on a favourable scenario; a moderate scenario; an unfavourable scenario; and a stressed scenario.

This technical standard also provides guidance as to the narrative that should accompany the calculations.

[10] https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1516899203728&uri=CELEX:02017R0653-20170412