

Thought Pieces with The Conexus Institute

Draft: Investing for retirement

How investment teams of superannuation funds can support retirement income solutions

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Introduction

The superannuation industry is transitioning its focus towards retirement, and is being pushed by both the Government and the regulators to get a move-on. Against this background, we provide some thoughts on how the investment teams of superannuation funds might contribute to the development of their organisation's retirement incomes strategies (RIS) in response to the Retirement Income Covenant (RIC). Investment teams have an important role to play as a supplier of both investment solutions and technical expertise.

Traditionally, the main role for super fund investment teams is as the 'return factory' that supports members to build wealth in the accumulation phase. Once a member retires, the primary objective changes from wealth accumulation to converting wealth into an income stream. The investment function also shifts from being central to becoming one element in the delivery of income to retirees. Furthermore, retirement is far more complex than accumulation. In accumulation, building wealth is an overarching and common goal for all members. In retirement, members can differ widely in their needs, wants and personal circumstances. Catering for these differences requires the ability to deliver more tailored solutions. The investment function should be structured in recognition of these changes in order to best assist the retirement effort.

We discuss what this means for investment teams under four main headings:

- ***Role for investment teams within the RIS*** – We highlight how investments need to work in conjunction with income streams and a drawdown strategy, provide sources of flexibly accessible funds, and dovetail with member-facing functions. We also provide some suggestions for how the investment team might assist with RIS development and management.
- ***Retirement differs from accumulation*** – We identify and discuss eight differences in retirement, including: (1) objectives; (2) member differences become important; (3) longevity uncertainty

enters the picture; (4) portfolio outflows due to drawdowns and immediate access; (5) other assets and income streams become relevant; (6) zero tax environment; (7) inflation risk is more present; and, (8) differences in risk and its measurement.

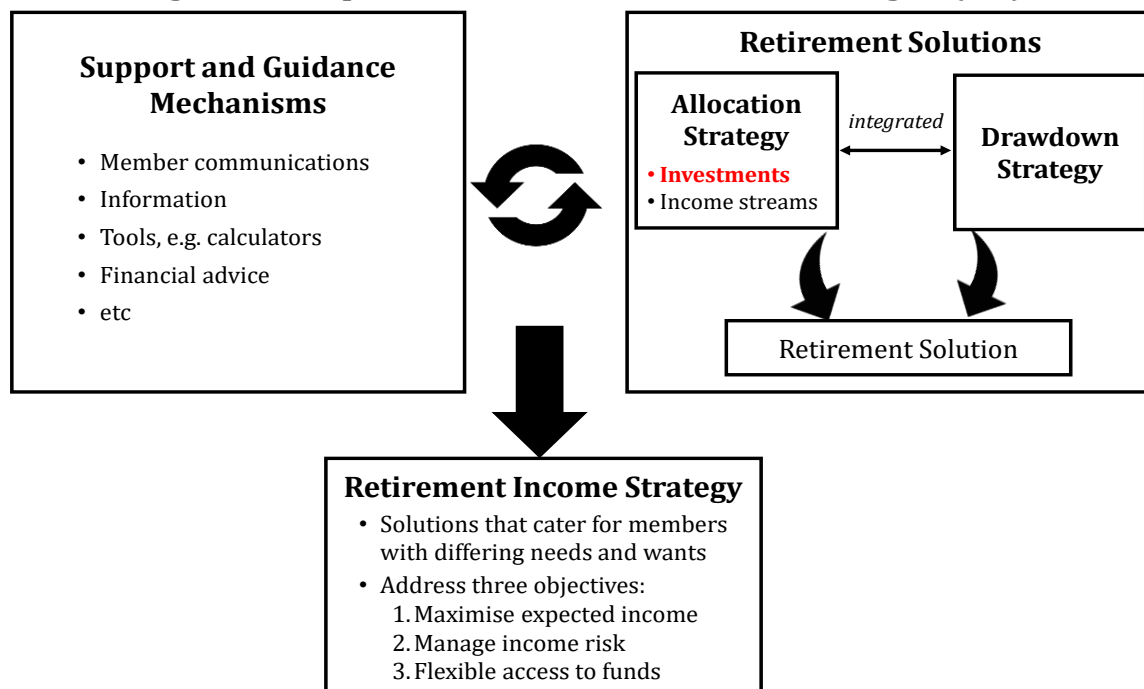
- **Role of investments within retirement solutions** – We discuss the roles that investments play within retirement solutions – the mechanism by which assets are converted into income. The two main elements are generating returns to increase wealth in support of higher income, and providing a source of accessible stable capital when required.
- **Investment models for retirement** – We discuss how the investment function and portfolios might be structured for retirement; and offer some thoughts on performance evaluation. We make three main suggestions:
 - Establish a dedicated retirement investment team with dual reporting lines through to both investments and the retirement segment;
 - Run separate portfolios for retirement and accumulation; and,
 - Supply two portfolios for flexible use within retirement solutions – a growth portfolio aimed at return generation, and a capital stable portfolio that provides a reliable source of funds.

We address some related matters in appendices. Appendix 1 discusses the possibility of the Your Future Your Super performance test (YFYS test) being applied to retirement, and the issues that might arise if this were to occur. Appendix 2 outlines how accepting more investment risk in pursuit of higher returns impacts on the distribution of income.

Role for investments within retirement income strategies

Figure 1 below describes what is involved in a RIS, which is a comprehensive strategy to help members achieve their financial goals in retirement. The two core components of RIS are the set of retirement solutions offered (right box) and the support and guidance mechanisms provided to members (left box). The retirement solution component comprises a joint strategy to allocate and draw down on assets to generate income. The overall aim of the RIS (bottom box) is to assist retired members with differing needs and wants in balancing the three objectives as set out in the RIC. These objectives may be paraphrased as: (1) maximising expected income, (2) managing income risk, and (3) providing flexible access to funds.

Figure 1: Components of Retirement Income Strategies (RIS)



The primary role of investment teams within the RIS is to invest the assets, as highlighted in red font in Figure 1. Thus the investment function is just one element of a much larger structure. In particular, investments need to operate in conjunction with four other elements of the RIS:

- **Any income streams available to the member** – The investments can be required to work in unison with lifetime income streams (i.e. annuities) and the Age Pension for those members who are eligible. We discuss how the presence of other income streams impacts on the role that the investments are expected to play within a retirement solution further below.
- **Drawdown strategies** – The investments will be drawn down over time to ‘shape up’ income after accounting for other sources of income. The nature of the drawdown strategy impacts on when the assets will be needed and in what magnitude, with related implications for investment horizon and liquidity needs.
- **Flexible access to funds** – Investments are central to delivering on this third RIC objective as they form the primary source of accessible funds within retirement solutions. Accessible funds in retirement have traditionally taken the form of an account-based pension. Members may have various motivations for desiring flexible access to funds, including: (1) meeting unplanned spending needs not covered by regular income, i.e. precautionary savings motives; (2) providing for bequests, including reversionary benefits; (3) supporting potential access to aged care; and, (4) having the capacity to respond to change or opportunities. Each of these motivations can imply investing in a different manner.
- **Support and guidance** – The requirement to provide members with support and guidance creates a need for investment teams to interact with member-facing functions. The aim of this engagement should be to connect the design of investment options to member needs and wants, including ensuring that the investment offerings are understandable and attractive to members.

Need to engage with other functions: An obligation, and an opportunity

The connection between investments and the other RIS elements as described above creates a need for investment teams to engage with other functions within the organisation, especially those responsible for retirement solution design and member engagement. Indeed, the involvement of investment teams in RIS development and management might be viewed as both an *obligation* and an *opportunity* to contribute more broadly. In addition to investing the assets to support the fund’s RIS, there are other ways that the investment team might contribute to the retirement efforts:

- **Join working groups** – The investment team might join working groups or task forces for development of aspects of the organisation’s RIS. This is an opportunity to both supply expertise and build a better understanding of how the investment function fits within the overall RIS.
- **Providing modelling inputs** – The investment team is the logical supplier of the return and inflation assumptions to be used in simulation of outcomes arising from retirement solutions. Simulation analysis is needed for solution design, assessment and communication.
- **Assisting with risk management** – Investment teams are used to dealing with risk, including risk measurement, hedging and liquidity management. They hence should be able to assist to frame up the risk management processes surrounding retirement solutions.
- **Complex product offerings** – Investment teams can leverage their technical expertise to assist with development and analysis of complex products such as lifetime income streams.
- **Modelling capability** – Investment teams typically contain staff with quantitative skills that could advise or support the organisation’s modelling efforts more broadly. They may assist with development of complex business cases, especially where return uncertainty is relevant.

How retirement differs from accumulation

Although the purpose of superannuation is delivering income in retirement, to date the management of investments for wealth accumulation has dominated proceedings. Superannuation fund investments and member communications have been largely framed around balances and returns, with a few exceptions¹. Focusing on asset values and returns may suffice during the accumulation phase, given that maximising balance at retirement also maximises potential income in retirement. Retirement, however, is a different game. We list eight ways in which retirement differs from accumulation in Figure 2, and then discuss each thereafter.

Figure 2: Ways in which retirement differs to accumulation

	Accumulation	Retirement
1. Objectives	Return-focused, including: <ul style="list-style-type: none"> • Real return targets • Benchmark-relative, e.g. YFYS • Peer-relative • Volatility (SRM, member concerns with their balance) 	RIC objectives: <ul style="list-style-type: none"> • Maximising expected income • Managing income risk • Providing flexible access to funds (Note: Relevance of return-focused objectives is an open question.)
2. Member needs and wants	Maximising wealth accumulated at retirement is a common and overarching need across members	Member personal circumstances vary widely, result in differing needs and wants (i.e. heterogeneity abounds).
3. Key uncertainties	Investment returns	Investment returns <u>and</u> longevity, i.e. how long the member might live. Longevity uncertainty implies a stochastic horizon.
4. Fund flows and accessibility	<ul style="list-style-type: none"> • Inflows from contributions • Funds largely inaccessible by member, but switching allowed 	<ul style="list-style-type: none"> • Outflows from drawdowns • Funds accessible at call by member; switching remains allowed
5. Relevance of other assets and any income streams	Suffices for trustees to manage superannuation assets in isolation of other member assets.	Assets outside of super and available income streams (including the Age Pension) important for how assets within retirement account should be managed.
6. Tax environment	Headline tax rates of 15% on income and 10% on capital gains.	Tax free environment. Full franking credit rebates are available.
7. Significance of inflation	Inflation viewed through lens of impact on asset value and returns.	Inflation risk more present as directly impacts on spending power of income.
8. Risk and its measurement	Volatility-focus may suffice, e.g. standard deviation, tracking error (YFYS test and peer risk), factor exposures, etc.	Volatility much less relevant. Greater need to consider risk of sustained loss of capital and possibly drawdown risk.

Discussion

1. **Objectives** – The RIC requires fund trustees to assist members in balancing the three objectives of maximising expected income, managing income risk, and providing flexible access to funds. These overarching objectives establish a different context for the investments relative to accumulation, during which investment teams are required to manage towards a suite of return-focused objectives. These include real return targets, benchmark-relative performance (most

¹ For instance, attempts have been made to reframe member communications around retirement income projections. Another notable exception is the asset/liability management approach – also known as liability-driven investing (LDI) – that was adopted by QSuper in designing its MySuper offering and is used by defined benefit funds.

notably the YFYS test), peer comparisons and managing portfolio volatility to the extent that it is reflected in the standard risk measure (SRM) and disliked by members. The relevance of the return-focused metrics used in accumulation to retirement is an open question, noting that they are only indirectly connected with the RIC objectives. Real return targets may still hold relevance, as they link to expected income. Whether benchmark-relative objectives such as the YFYS test and peer relative considerations matter may depend on whether and how they are imputed into the assessment of retirement solutions. Appendix 1 discusses the possibility of the YFYS test being applied in retirement and issues that may arise. Volatility is poorly connected with income objectives, and is discussed under point 8.

2. **Member needs and wants** – In accumulation, the main dimension along which members may be distinguished is tolerance for taking investment risk in search of higher returns. In retirement, member differences matter much more and span many dimensions. Some key attributes that impact on the retirement solution that is suitable for a member include: age; total financial assets (both inside and outside of superannuation); homeownership; partnered status; and income preferences, i.e. desired type of income stream and income risk tolerance. The main implication is that the investment options made available in retirement should be structured to be flexibly incorporated into a diverse range of retirement solutions designed to cater for retirees with differing needs.
3. **Key uncertainties** – In addition to investment risk, longevity risk enters the frame during retirement, i.e. it is unknown how long a member will live. The implication is that the horizon becomes stochastic due to uncertainty over the time frame that income is needed and the assets should last. The addition of longevity uncertainty mainly impacts on the framing of drawdown strategies and the need for lifetime income streams; noting that the latter provide longevity insurance through access to ‘mortality credits’². Nevertheless, the need to manage longevity risk can also feed back into how the assets should be invested, which we discuss in the next section.
4. **Fund flows and accessibility** – In accumulation, members make contributions and are unable to access their funds apart from in exceptional circumstances. Members also have the ability to switch, an option that is only used by a small minority, and may transfer their funds into the retirement phase after preservation age. In retirement, member accounts move into drawdown and may be accessed at any time, either directly or through switching decisions. This has three main effects. First, there are implications for liquidity and treasury management, as the cashflow dynamics differ between accumulation and retirement portfolios. However, this depends on a complex dynamic that may differ across funds³, Second, the sequence of returns matters more under drawdown⁴, with poor returns earlier in retirement leading to a faster erosion of the balance⁵. Third, once members retire and cease earning income they lose the ability and flexibility to make further savings contributions, which can lower the capacity⁶ to take risk.
5. **Relevance of other assets and any income streams** – In theory, the member’s total portfolio should be the focal point. In accumulation, the loss of efficiency in failing to adopt a total portfolio

² Mortality credits involve the assets of those who die being used to sustain income for those who survive, thus providing longevity insurance. This insurance is supported by pooling that may be provided by an insurance company or through group pooling between members.

³ The relative net cash flows for retirement versus accumulation portfolios will reflect the balance of: (a) drawdowns versus contributions; (b) extent that members make use of their immediate access to funds in retirement; (c) the likelihood of switching either between funds, or between investment options, (d) members shifting from accumulation into the retirement phase; and (e) funds remaining upon death to be paid out. We consider retirement portfolios as more likely to be in outflow, but this need not be the case.

⁴ Sequencing risk might be viewed as an interaction between investment risk and portfolio flows, noting that the sequence of returns does not matter to wealth accumulation in the absence of flows.

⁵ This is particularly the case where income is drawn as a fixed amount (e.g. to reach the ASFA Comfortable income standard) as against a given percentage (e.g. the minimum drawdown rules), as drawing a fixed amount results in a higher percentage of the balance being taken after poor investment returns.

⁶ Risk capacity refers to the *ability* to bear risk. It differs from risk aversion, which is the *willingness* to bear risk. It is debatable whether risk aversion increases at older ages, or remains a consistent personal attribute.

view is (probably) acceptable. In retirement, the other assets and income streams that the member has available, including the Age Pension, become quite relevant for retirement solution design. The investments in the member's retirement account with their superannuation fund need to work in tandem with these other assets and income streams in delivering income. In addition, assets outside of superannuation may be a relevant consideration for fund trustees when considering a member's requirement for flexible access to funds⁷.

6. **Tax environment** – Retirement is a tax-free environment, as compared to headline tax rates of 15% on income and 10% on capital gains⁸ in accumulation. This can impact on investments in various ways. Franking credits become relatively more valuable in retirement than accumulation, particularly to the extent that they are not priced by the market and hence provide a 'return bonus'⁹. Income is also no longer penalised relative to capital gains in retirement. Finally, investment risk is magnified in a zero-tax environment as gains and losses are no longer being muted by capital gains tax.
7. **Significance of inflation** – While inflation matters in accumulation, it is typically viewed through the lens of the implications for asset values and returns. During retirement, inflation risk becomes more present as the assets are being directly used to generate income to support spending. The specific exposure is inflation in the cost of living for retirees. Two points are worth noting. First, inflation matters to the extent that it impacts on the real value of the assets thus leading to reduced capacity to generate real income. Second, the Age Pension provides inflation protection for eligible members, being indexed to the maximum of the CPI and average weekly earnings.
8. **Risk and its measurement** – The relevance of various risks and risk measures changes when investing to generate retirement income. Traditional volatility-focused measures often used in accumulation – such as standard deviation, covariance, tracking error and factor models – speak to potential for return fluctuations over single period intervals, either in absolute terms or relative to a benchmark or peers. Shorter-term volatility in returns is much less relevant where the generation of retirement income over a long horizon is the main focus¹⁰. Nevertheless, some of these measures, in particular tracking error, may remain influential to the extent that relative performance versus benchmarks or peers is used in performance evaluation (see later discussion on this topic, and Appendix 1 on the YFYS test).

More to the point, the risk toolkit should be expanded in retirement to support analysis of potential for sustained loss of capital and drawdowns¹¹. Simulation and scenario analysis may be used to gauge the risk of sustained losses over long horizons and its implications for income. Drawdown measures might be directed at revealing the potential duration and magnitude of negative returns. This can be informative of the sequencing risk that can arise when drawing down on assets to generate income, and the management of portfolios intended to provide stability of capital. Drawdown is also better connected than volatility to any concerns that retirees might have over reduction in their balance on which they may be relying for income generation.

⁷ Retired members that own their own home or have large assets outside of super may not need the trustee to provide them with flexible access to funds.

⁸ The effective tax rate on capital gains can be even lower than 10% due to deferral of gains realisation, tax loss harvesting and effective tax parcel management.

⁹ The Australian Tax Office reports an average franking credit rebate yield of 1.55% in May 2023, and an average since June 1998 of 1.34%, <https://www.ato.gov.au/Rates/Company-tax---imputation--average-franking-credit---rebate-yields/#Whentousestheseyields>. The extent to which the value of franking credits is offset by lower expected returns is unresolved in the academic literature, and depends on the extent to which franking is priced by the marginal investor. Nevertheless, it is generally accepted that franking credits are not fully priced, meaning that some portion is likely to flow through into higher returns for retirees.

¹⁰ For discussion of the shortcomings of volatility-focused measures when investing for the long term, see Warren, G. 2021. "Investment Risk for Long-Term Investors", available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3820435.

¹¹ See Geboers, H., Depaire, B. and Annaert, J., 2023. "A review on drawdown risk measures and their implications for risk management", *Journal of Economic Surveys*, 37(3), 865-889.

Role for investments within retirement income solutions

We now drill deeper into what retirement solutions might entail and connect this through to the roles that investments might be expected to play within these solutions. Figure 3 provides a point of departure for unpacking the role of investments. We extract ‘optimal’¹² asset allocations at retirement for seven different member types from Butt, Khemka and Warren (2022)¹³. This study creates ‘cameos’ for 14 members distinguished by balance at retirement, homeownership status, income objective and risk tolerance. Figure 3 reports allocations for seven members with low risk tolerance. Assets that are assumed available include a growth portfolio, a defensive portfolio, an immediate real life annuity that pays guaranteed real income for as long as the member survives, and a deferred real life annuity where the real income payments commence at age 85. The analysis incorporates the Age Pension and related supplements.

Figure 3: How ‘optimal’ asset allocation can vary across member types

Cameo			Optimal asset allocation with annuities					Optimal asset allocation without annuities		
Initial Balance	Home-owner?	Income objective	Growth assets	Defensive assets	Immediate life annuity	Deferred life annuity	Total	Growth assets	Defensive assets	Total
\$200,000	No	Target: AM+rent	100%	-	-	-	100%	100%	-	100%
\$200,000	Yes	Target: AM	90%	-	-	10%	100%	100%	-	100%
\$500,000	No	Target: AC+rent	100%	-	-	-	100%	100%	-	100%
\$500,000	Yes	Target: AC	32%	-	64%	4%	100%	53%	47%	100%
\$500,000	Yes	Optimise	56%	-	42%	2%	100%	100%	-	100%
\$800,000	Yes	Target: AC	76%	-	14%	10%	100%	45%	55%	100%
\$800,000	Yes	Optimise	71%	-	20%	9%	100%	100%	-	100%

Notes: AM = ASFA modest; AC = ASFA comfortable. Results are for members with low risk tolerance.

Source: Butt, Khemka and Warren (2022)

The roles being played by investments within the solutions presented in Figure 3 are reflected in the variation in asset allocations across members, and the analysis with and without annuities. Where annuities are available, the optimal allocations contain a mix of growth assets and annuities without any exposure to defensive assets. In this case, the primary role of the investments is to generate higher returns to boost potential income. Meanwhile, annuities are being used for the defensive exposure, and are crowding out the need for traditional defensive assets. Here annuities are dominating fixed income as they offer a form of fixed income exposure combined with longevity insurance through access to mortality credits, and hence guarantee a level of income for life. Exposure to defensive assets can emerge, however, under an income target objective where they assist to ‘lock-in’ the target. For instance, this happens for the 4th and 6th members when annuities are unavailable (see right-hand side of Figure 3), in which case some defensive asset exposure reduces the risk of shortfall versus the income target¹⁴.

Although not considered by Butt et al. (2022), another use for defensive assets could be to limit the volatility of returns and thus the retirement account balance. While managing short-term volatility can be ‘sub-optimal’ from the perspective of utility maximisation, it might nevertheless be done in recognition that a 100% growth portfolio could be unpalatable to some members. The desire of

¹² Dynamic programming is applied in estimating both asset allocation and drawdowns.

¹³ Butt, A., Khemka, G. and Warren, G.J., 2022. Heterogeneity in optimal investment and drawdown strategies in retirement. *Pacific-Basin Finance Journal*, 74, p.101798.

¹⁴ Butt et al. (2022) also find that defensive assets enter the mix over time following poor investment returns when deferred life annuities are being used. In this case, de-risking helps ensure that income is sustained through until the arrival of income from the deferred life annuity. This is another manifestation of using defensive assets to secure an income target.

members to limit volatility could be motivated by behavioural considerations such as narrow framing around retirement account or myopic loss aversion, which could arise notwithstanding defensive exposure through annuities or access to the Age Pension. Adding some defensive exposure into the mix may help members accept a retirement solution, or avert the possibility of over-reacting to market declines by going too defensive at an inappropriate time. We return to this issue later.

A further consideration not captured by the analysis of Butt et al. (2022) – who optimise income – is the third RIC objective of providing flexible access to funds. Meeting this objective requires investing so that accessible assets are available when they are needed. Here the motivation for providing flexible access to funds matters. Precautionary motives suggest investing defensively to ensure that the capital is not only there when it is needed, but also that it is relatively secure in value. (This role is a prime motivation for our proposal to establish a capital stable portfolio.) Meanwhile, motivations related to bequests or saving to cover possible aged care costs might be better met through some growth exposure in order to build-up capital over the long run.

To summarise, investments can contribute to retirement solutions in two main ways:

- **Generating returns** – Delivering better compound returns with the aim of boosting potential income is the main role that investments play in retirement solutions. Higher potential income may be expressed in allowing either (a) more income to be affordably drawn, or (b) a given level of income to be sustained over a longer period. Appendix 2 discusses how greater growth exposure manifests in higher expected income and income risk. Higher expected returns might also be sought to support a bequest or entry into aged care later in life for some members.
- **Investing for capital stability** – There are three reasons why a stable source of capital may be desirable within retirement solutions. The first and most important is to provide a reliable source of accessible funds, probably as a form of precautionary savings. Second is to underpin the delivery of a reliable (albeit lower) income stream. However, the need here is limited if investments are combined with annuities for the defensive exposure. Third might be to reduce portfolio volatility to a level that is tolerable for the member.

Liquidity is an additional consideration with retirement portfolios in drawdown and providing a source of readily accessible funds that could be drawn at any time. The possibility of having to accommodate outflows thus needs to be incorporated into liquidity and treasury management, while accounting for the retired member base profile.

Investment models for retirement

We now address four issues that relate to how investments for retirement might be structured:

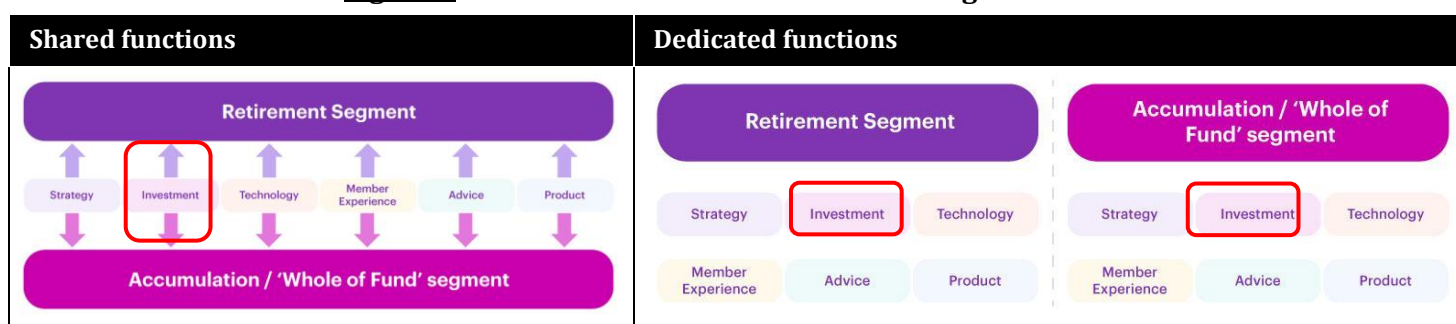
- (i) *Structuring the investment function* – We suggest establishing a dedicated retirement investment team with dual reporting lines to investments and the retirement segment.
- (ii) *Shared versus separate portfolios for retirement and accumulation* – We see a strong case for maintaining separate portfolios for retirement and accumulation.
- (iii) *Structuring of retirement portfolios* – We propose supplying two portfolios for use in retirement solutions: a return-seeking ‘growth’ portfolio to boost income potential, and a ‘capital stable’ portfolio that aims to at least maintain the real value of the assets. We also discuss if traditional balanced portfolios might have a role.
- (iv) *Performance evaluation* – We offer preliminary thoughts on what is a fraught topic. We sketch out possible performance evaluation techniques that might be applied to growth portfolios, capital stable portfolios and balanced portfolios in retirement. Appendix 1 expands on the possible application of the YFYS test to retirement.

(i) Structuring the investment function

An overarching question is how the investment function is best structured to perform its role most effectively within the RIS. A range of possibilities exist, and the answer will depend on the organisation's circumstances and its broader operating model. In many instances, the most appropriate structure will probably involve a specialist retirement investment team with dual reporting lines to both investments and the retirement segment.

To set the scene, Figure 4 is taken from Callil (2023) and depicts the 'shared functions' versus 'dedicated functions' model for the retirement segment. Under shared functions, the investment team is a provider of investment portfolios that are used in retirement solutions. Under dedicated functions, the retirement segment would have its own investment team. A specialist retirement investments team with dual reporting lines represents a hybrid model. This team could be physically located within either the investment team or the retirement segment, or have team members that span both. Hard reporting lines seem conceptually preferable, but may be challenging in practice.

Figure 4: Two structures for the retirement segment



Source: WTW, see [Reimagining the retirement segment - WTW \(wtwco.com\)](https://www.wtwco.com)

A central trade-off is between capturing scale benefits and having access to dedicated retirement expertise. The case for a single investment function is underpinned by the significant scale economies for many investment activities, including asset and manager selection, modelling, transaction management and operational support. Two different investment teams would double up on some of these activities. Further, two teams could deliver significantly different performance outcomes that may confuse. On the other hand, there are advantages in the retirement segment having access to its own specialist investment professionals that are fully committed to retirement. It would help ensure that the investments are managed in accordance with the objectives and requirements of retirement solutions¹⁵, and give the retirement segment ready access to expertise given that it is tied to the segment itself.

There is no definitive answer on which of the book-end models of shared and dedicated functions is better. However, the hybrid model may provide the best of both worlds in many instances. It would retain most of the scale economies of a single investment team, while ensuring that the retirement investments are overseen by a team with specialist skills and a responsibility to ensure that they dovetail into retirement solutions. Specialists within the retirement investments team might also be given broader responsibilities beyond managing retirement portfolios, such as involvement in retirement solution modelling or design of lifetime income products.

¹⁵ This would be particularly important where retirement solutions are designed using LDI where the relation between the assets and the income 'liability' is central. Here the liability as the present value of income in retirement is complex and stochastic, which gives rise to various issues. For discussion, see Idzorek, T. and Blanchett D. either in "LDI Misapplied: Income Portfolios and Liability-Driven Investing", *Morningstar Investment Management*, September 2017 or "LDI for Individual Portfolios", *Journal of Investing*, 28(1), 2019, 31-54.

(ii) Shared or separate portfolios for retirement and accumulation

The differences between retirement and accumulation identified earlier are significant enough to support a strong case for retirement and accumulation portfolios to be separately managed. Key aspects that suggest running separate portfolios include:

- **Objectives, risk and horizon** – Objectives, risks to achieving those objectives and related investment horizons differ sufficiently between retirement and accumulation to motivate separate portfolios. In particular, managing to support retirement income over long periods implies a focus on long-term compound returns, avoiding sustained loss of capital and managing drawdowns to limit sequencing risk¹⁶. Investing to limit drawdowns also caters those retirees who are more averse to fluctuations in their balance as they are relying on savings for income. The shift in focus to income in retirement may present an opportunity to adopt a more long-term mindset in managing retirement portfolios.
- **Liquidity** – Managing retirement portfolios in outflow offering immediate access to funds requires a keener focus on liquidity and treasury management than managing accumulation portfolios that are more likely to be in inflow.
- **Taxation and return modelling** – The change in tax environment not only impacts on the type of investment that may be preferred, but also on modelling of expected returns. The need to account for the value of franking credits to retirees is particularly notable.
- **Need for inflation hedging** – The argument that inflation risk is more present in retirement than accumulation suggests that a greater premium might be placed on hedging of inflation risk.

Separate accumulation and retirement portfolios could facilitate adopting differing portfolio construction approaches at various levels, including the overall portfolio, growth and defensive sub-portfolios and individual asset class portfolios. The flexibility to tailor portfolios across various levels is a notable advantage of running separate portfolios.

The major advantages of having shared portfolios for both accumulation and retirement relates to potential for greater efficiencies in portfolio management functions from lower costs and scale advantages. The shared portfolios structure might entail common underlying portfolios that feed into both accumulation and retirement options operating under their own legal and tax frameworks. On balance, the uplift from separate portfolios that explicitly cater for retirement and accumulation might significantly outweigh any efficiency gains from shared portfolios. In addition, any loss in scale from managing two portfolios could be minimal as both would leverage off existing capabilities in manager selection, transaction management and operational support.

(iii) Structuring of retirement portfolios

We propose that the investment team supplies two portfolios for use in retirement solutions – a growth portfolio and a capital stable portfolio. These portfolios would perform the two main roles that investments are required to play in retirement solutions – return generation to support higher potential income, and a source of secure capital – in a flexible manner that underpins tailoring to the needs of the members for which various solutions are designed. Keeping the number of investment portfolios to the minimum required to perform these two roles would help limit costs and provide scale benefits. One consequence of providing growth and capital stable portfolios is that the high level ‘growth versus defensive’ asset allocation decision is taken out of the hands of the investment team and given to the designer of the retirement solution. The investment team would still be making asset allocation and selection decisions within each portfolio.

¹⁶ Concern with performance versus investment benchmarks and peers may remain in retirement, given established performance evaluation frameworks and the desire to have some form of externally-focused assessment of superannuation funds. However, this does not in itself provide sufficient reason to run shared portfolios.

Other variations include combining the growth and capital stable portfolios to form a balanced portfolio, or offering the two portfolios in conjunction with retirement versions of existing accumulation options¹⁷. We discuss the possibility of using balanced funds in retirement solutions at the end of the section, although we consider this to be a second-best solution relative to offering dual portfolios that perform differing roles and may be deployed as required.

Growth portfolio

The primary objective of the growth portfolio would be to maximise compound real returns to boost real wealth and hence potential income. As a return-seeking portfolio, it would contain minimal defensive assets (unless their real returns were relatively attractive). It could be viewed as the counterpart of 'high growth' options in accumulation. The growth portfolio might be managed as a long-term investment portfolio, which Warren (2021)¹⁸ discusses in-depth. Potential for drawdown could be a secondary consideration with the aim of managing sequencing risk. The latter opens the possibility of including investments that help to reduce drawdown risk, potentially including alternative assets, provided that the reduction in expected returns is modest.

Capital stable portfolio

The primary objective of the capital stable portfolio would be to avoid reductions in the real value of the capital invested. Seeking higher returns where safe to do so provides a secondary objective. The main role within retirement solutions would be to provide accessible funds of a relatively stable value, in particular to satisfy any precautionary savings motives. Other subsidiary roles might be to establish a stable source of capital that underwrites a given level of real income, or reduce return volatility through combining with the growth portfolio to form balanced funds. The existence of a capital stable portfolio may also be used to give members confidence to take more investment risk overall, which we discuss below. All these roles would be fulfilled more effectively where there is an expectation that the capital stable portfolio is likely retain its real value.

Capital stable portfolios might aim to minimise the risk of real loss of capital over shorter horizons. This reflects their likely primary purpose as a stable source of capital, and recognises that members would likely hold an expectation that their capital is safe. One approach to managing such portfolios might be to first identify the minimum risk asset, and then consider seeking higher real returns subject to limiting the risk of real loss of capital to acceptable levels.

In theory, short duration inflation-linked government securities (e.g. 1-year maturity) would be the minimum risk asset in this context, although the instruments may not be readily available. Short duration nominal fixed income securities might be viewed as having limited risk to the extent that their returns can be expected to equal or exceed inflation¹⁹. Longer-term inflation-linked securities can be highly risky due to their exposure to fluctuations in capital values as yields change²⁰. Nominal long-term bonds are even riskier as they carry both inflation and capital value risk. Thus a capital stable portfolio is likely to look quite different to a traditional defensive asset portfolio.

Balanced portfolios

Balanced portfolios could be incorporated directly into retirement solutions in two forms. First is combining growth and capital stable portfolios as proposed above to form a balanced portfolio. In this case, the capital stable portfolio would play the role of a 'risk-free' asset that reduces volatility

¹⁷ One issue might be whether the retirement portfolios are managed toward sustainable investing goals, or if separate sustainable versions of the retirement portfolios should also be offered.

¹⁸ Warren, G. 2021. "Investment Risk for Long-Term Investors", available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3820435.

¹⁹ This criterion would be met if the central bank manages cash rates to be positive in real terms.

²⁰ Long-term inflation-linked bonds provide certain real cash flows to maturity but their prices are highly exposed to changes in yields, i.e. discount rate risk.

but also returns for the overall portfolio²¹. Second is creating retirement versions of balanced portfolios, perhaps emulating those available as accumulation options. While there can be scale benefits in the latter approach, there is greater likelihood that portfolios built for accumulation may be less suitable for use in retirement given the differences discussed under sub-section (ii).

In any event, we consider the use of balanced portfolios within retirement solutions as a second best solution. The primary role of the return-seeking component of retirement solutions is to maximise wealth generation and hence potential income, and may be more optimally done by taking defensive exposure through either lifetime income streams or access to the Age Pension (as per earlier discussion of the findings by Butt et al., 2022). Adding defensive assets to growth exposure dilutes their effectiveness in performing this wealth generation role. Refer Appendix 2 for an indication of how defensive assets might contribute to a less attractive distribution for expected income.

A preferable approach may to manage investor concerns over return volatility through solution design and communications, rather than diluting expected returns through combining growth and defensive exposure to form a balanced portfolio. In this regard, keeping growth and capital stable portfolios as standalone portfolios allows the capital stable portfolio to be used in ways that gives members confidence to invest more in growth assets than they might have otherwise. For instance, using the capital stable portfolio as a precautionary or contingency fund 'carve-out' may encourage members to accept investment risk due to the comfort from having some funds set aside 'just in case'. Another technique is to use the capital stable portfolio as part of a bucketing approach where it supports immediate income needs, giving the member more confidence to invest the remainder in growth assets. Other forms of framing may also assist, such as emphasising where risk is being managed through a lifetime income stream or the Age Pension, or focusing on projected income rather than returns and balances in member communications.

(iv) Performance evaluation

RIS assessment is discussed in two Conexus pieces²². In the first piece, we propose assessing RIS through the combination of a qualitative checklist that evaluates the extent to which trustees are taking all the steps required to assist members to achieve their retirement goals, and quantitative modelling of the forward-looking distribution of income and balances to assess the extent to which projected outcomes are meeting member objectives. The second thought piece outlines how the quantitative component might operate. These thought pieces highlight the need to *forward-looking* (i.e. ex-ante) assessment, given that retirement is experienced over an extended period of time thus making it impractical to wait for realised outcomes to gauge success. A member outcomes lens is adopted, which is the primary mechanism through which APRA will be assessing RIS²³. The investment team should be able to contribute technical skills to the development of these forward-looking assessment frameworks, especially the quantitative component given that it involves simulation of potential future outcomes.

Nevertheless, we envisage that assessment of realised investment performance will form part of the RIS assessment framework as part of the checklist. In addition, it is highly possible that some form of backward-looking performance evaluation of the market-exposed components of retirement solutions will be applied by APRA under the YFYS test, which we discuss further in Appendix 1.

The most difficult element of performance evaluation is developing appropriate benchmarks. We offer some thoughts below for the three retirement portfolios mentioned earlier, noting that these ideas are preliminary and require further investigation:

²¹ In traditional balanced portfolios, defensive assets may play a heightened role as diversifiers. However, this is typically contingent on bonds being negatively correlated with equities, and is regime dependent.

²² See [Assessing-retirement-strategies-Final-20221104.pdf \(theconexusinstitute.org.au\)](#) and [Quantitative-Assessment-of-RIS-Conexus-Institute-20230622.pdf \(theconexusinstitute.org.au\)](#).

²³ The [draft Prudential Standard SPS 515 Strategic Planning and Member Outcomes](#) states: "An RSE licensee's business plan must be informed by an annual review of the appropriateness of the RSE licensee's retirement income strategy."

- **Growth portfolios** – Given the primary objective of growth portfolios would be to maximise compound expected return, performance evaluation might be against a representative benchmark of growth assets with high expected returns. One possibility could be benchmarking against equity markets, perhaps based around a target mix of Australian and global equities. Another alternative may be to benchmark against a more diversified reference portfolio of growth assets like that seen in “high growth” options used in accumulation, except probably excluding any fixed income component. Such benchmarks could accommodate a YFYS test (see Appendix 1).
- **Capital stable portfolios** – The objectives of a capital stable portfolio motivate the use of two benchmarks for performance evaluation. The first would be a real return of zero to align with the primary objective of maintaining the real value of capital. This would be a counterpart to the CPI-plus objectives used in accumulation. The second benchmark might be short duration government securities. Here the ideal benchmark would be short duration inflation-linked government bonds (e.g. one-year), or some proxy. Given that the securities may not be available in practice, an alternative might be to benchmark against nominal short-term government securities.
- **Balanced portfolios** –When balanced portfolios are formed by combining growth and capital stable portfolios, performance could be benchmarked against a weighted average of the returns versus the benchmarks for the growth portfolio and the capital stable portfolio. Where more traditional balanced portfolios are used, performance evaluation might be conducted in a similar manner to that applied to balanced funds in accumulation, with appropriate adjustment for differing tax status.

In closing: Investment teams need to be involved in retirement

Developing RIS is a major challenge facing superannuation funds. Significant adjustments are required in business models, and this includes the structure of the investment function. It also calls for a change in mindset towards delivering income in retirement to members who may differ in important ways. Investment teams should get involved in the transition. They could help lead the way by proactively building investment portfolios designed for use in retirement solutions. Investment teams might also make their expertise available and this would be of value for developing RIS, most notably in more technical areas such risk management, analysis of complex product offerings and modelling capabilities. An opportunity exists for investment teams to make a significant contribution to member outcomes during retirement.

We offer four key suggestions within this thought piece. First, we see merit in maintaining a single investment function but creating a team of retirement investment specialists with dual reporting lines into both investments and the retirement segment. Second, we recommend running separate retirement and accumulation portfolios as the differences are significant enough to make dedicated retirement portfolios a superior option over cloning accumulation portfolios. Third, we propose supplying a growth portfolio and a capital stable portfolio for the foundational ‘building blocks’ of retirement solutions. We consider two portfolios that perform specific roles as preferable to balanced portfolios, as they can be flexibly incorporated to retirement solutions to meet the needs of particular members. Fourth, investment teams have much to offer, and should get involved in helping to move forward on the retirement journey.

Appendix 1: YFYS test and retirement portfolios

The YFYS test is a controversial legislated test that is currently applied to the accumulation options of superannuation funds, assessing the performance against a tailored benchmark based on strategic asset allocation (SAA). In this Appendix, we discuss the possibility of the YFYS test being expanded to retirement portfolios, and the issues that could arise.

John Lonsdale, Chair of APRA, recently flagged the potential for performance testing (both the YFYS test and APRA's heatmaps) to be applied to retirement-phase options²⁴. While legislation would be required to extend the YFYS test, the related APRA heatmaps²⁵ could be an initial step by APRA on the pathway to introducing performance testing into the retirement phase.

The YFYS test was originally proposed by the Productivity Commission²⁶, with advocates pointing to the need for an objective "bright-lines" test to protect members from the cumulative impact of long-term exposure to an underperforming fund. APRA asserts that the test has contributed to improved member outcomes through industry consolidation and reductions in fees.

Critics of the YFYS test mostly support a test to protect disengaged members, but focus on how test design impacts on portfolio management practices in ways that could ultimately lead to worse member outcomes over time. The Conexus Institute has undertaken extensive research on this topic²⁷. Among the many issues, we highlight the following:

- Failure of the test to consider the full performance outcomes that members receive, most importantly the impact of asset allocation decisions.
- Backwards-looking nature of the test, which ignores changes made by funds to improve forward-looking performance.
- The test is risk agnostic, meaning that it ignores the impact of risk management activities undertaken within an asset class or at the portfolio level.
- Benchmarking is very challenging beyond the mainstream publicly listed assets.

Fund trustees now appear to be 'managing' to the YFYS test to the extent it seems unlikely that many funds will fail in the future. We see considerable risk of a significant implicit cost to members resulting from trustees focusing on passing the test rather than maximising member outcomes²⁸.

The issues highlighted above will carry over to a retirement setting. In addition, two other quite difficult challenges emerge with relation to assessment of retirement solutions:

1. **Retirement differs significantly to accumulation** – Delivering retirement income is a far more complex problem than accumulation. While return generation has a direct link to member outcomes in accumulation, the relationship is less direct in retirement where the primary concern is the level, stability and sustainability of income (as identified in the Retirement Income Covenant) that is delivered over a long period of time. An income rather than return lens is hence required to assess the extent to which a solution is likely to deliver good member outcomes. Further, the long timeframes involved necessitates ex ante rather than ex post assessment²⁹. To further complicate matters, the definition of retirement income is open to interpretation and can

²⁴ <https://www.afr.com/policy/economy/we-re-at-an-inflection-point-big-super-is-failing-retirees-20230823-p5dyrk>

²⁵ The APRA heatmaps are analytically similar to the YFYS test, but without the same consequences of failure.

²⁶ <https://www.pc.gov.au/inquiries/completed/superannuation/assessment/report>

²⁷ For a comprehensive research hub on the YFYS test, go to: <https://theconexusinstitute.org.au/resources/your-future-your-super/>

²⁸ <https://theconexusinstitute.org.au/wp-content/uploads/2022/10/YFYS-Sustainable-tracking-error-re-visited-20221012-final.pdf>

²⁹ As explained in <https://theconexusinstitute.org.au/wp-content/uploads/2022/12/Assessing-retirement-strategies-Final-20221202-Updated.pdf>

include income from other sources such as the Age Pension³⁰. Against this backdrop, the YFYS test struggles as a measure of member outcomes due to its focus on the backwards-looking level of investment performance rather than a future stream of income that potentially spans decades.

2. Retirement solutions are much more than a single product – As displayed in Figure 1, the retirement solutions offered by super funds may integrate multiple products (e.g. an account-based pension and a product that provides longevity protection), an asset allocation, and a drawdown program. There is likely to be greater tailoring of solutions to match member needs, compared with the accumulation phase where defaults reign. We expect large differences in both the retirement solutions offered by funds, and the retirement solutions offered to different members within the same fund. In this context, the existing YFYS test framework again appears a poor match for assessing retirement solutions. Focusing on investment performance only evaluates one component of the full retirement solution (i.e. the account-based pension). In the same way the test is agnostic to investment risk, it is also agnostic to longevity risk so cannot be applied to longevity solutions like annuities. Meanwhile, the greater degree of member tailoring would make it difficult for APRA to identify ‘test case’ retirement strategies as a form of benchmark for the assessment.

Overall, there is a significant mis-match between the policy problem of protecting members from poor-performing retirement income solutions, and the policy tool – a backwards-looking, benchmark-focused, risk-agnostic return-based test. Simply put, the existing YFYS test is not fit-for-purpose to assess retirement solutions offered by funds, if they develop as we hope.

Nonetheless, we can see a pathway whereby the regulators and policymakers might push forward with performance testing. It looks like this. The industry lands on a less complex and reasonably standardised approach to retirement solutions under which most super funds focus on account-based pensions with investment strategies that replicate their accumulation offerings, with longevity solutions being offered as a member-choice option rather than being integrated into retirement solutions. In this case, policymakers and regulators would have a sounder case for extending performance testing to account-based pension products as the connection between performance and potential retirement income and hence member outcomes would be more direct (even if still far from perfect³¹).

A final suggestion is that industry incorporates YFYS-style assessment into their internal governance frameworks. This could form part of a multi-metric approach to assessment of both investment performance and the components of RIS. It would send a signal of high governance standards to regulators, hence reducing the case for formal testing.

³⁰ Defining income as that arising from assets managed by the super fund plus the Age Pension is the most common approach identified in the joint thematic review undertaken by APRA and ASIC.

³¹ For instance, the drawdown strategy would still be a factor in the income stream that is delivered.

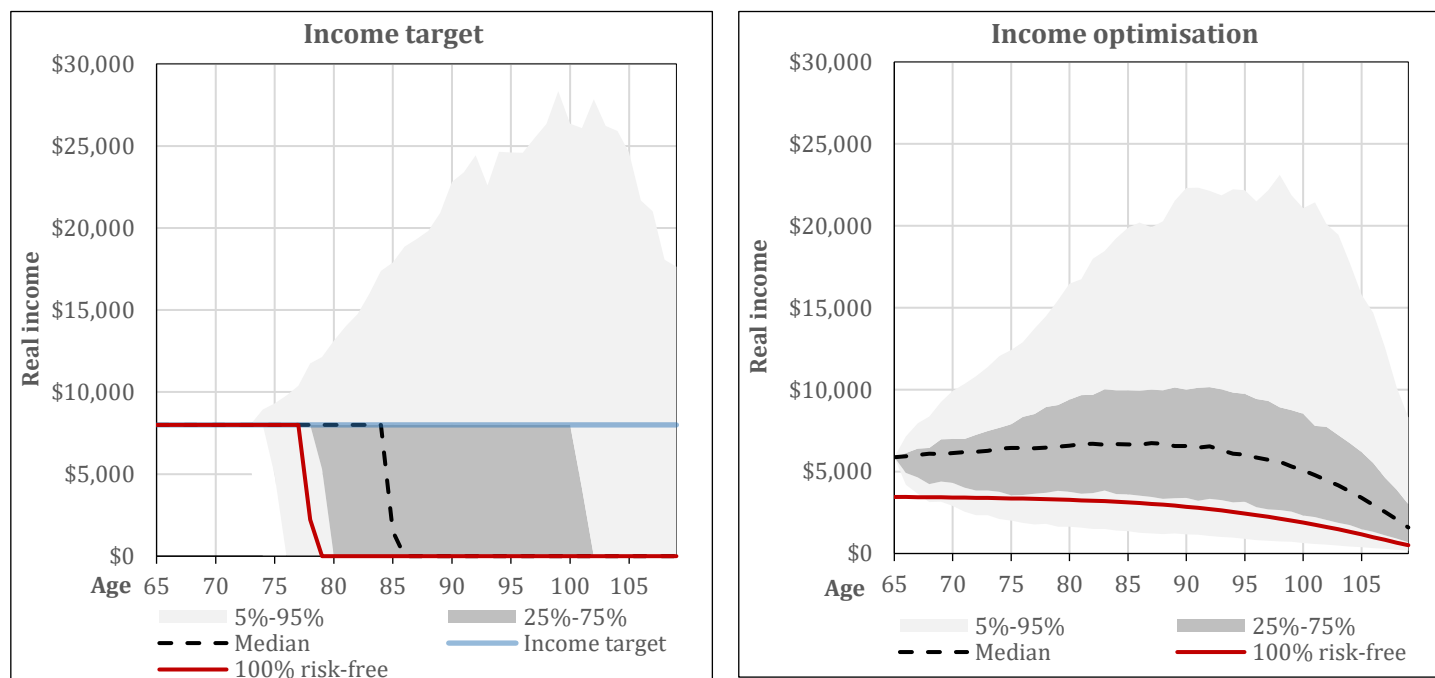
Appendix 2: Investment risk and income potential

This appendix outlines how taking on investment risk by investing in higher returning but more volatile ‘growth’ assets play through into income over long horizons, relative to investing in lower returning but less volatile assets. Higher returning assets can boost potential income through greater wealth accumulation in two ways. First, greater wealth can allow more income to be affordably drawn. Second, greater wealth can allow a given level of income to be sustained over a longer period. Meanwhile, investing in lower-returning but less volatile assets may help to guarantee a given level of income, but that income will most likely be lower in magnitude.

This brings us to the implications for income risk, which are nuanced. Investing in higher-return, more-volatile assets widens the distribution of income relative to investing in lower-returning, less-volatile assets. Closer examination reveals that the **probability** is increased of delivering income that is either greater or sustained for longer – often significantly. However, it also worsens the potential **magnitude** of poorer income outcomes, i.e. income has some chance of ending up much lower or being sustained over a much shorter period. In essence, the overall income distribution is elevated but the lower tail of the distribution deteriorates. See Warren (2021, *op cit*) for further discussion.

Figure 5 illustrates by comparing the distribution of income arising from investing in a growth portfolio offering a 6% real compound expected return with 15% volatility with an investment in a risk-free asset delivering a certain real return of 1%. We estimate the distribution of income extracted from a retirement balance of \$100,000 under two different income objectives and hence drawdown strategies. Under an income target objective (left chart), an assumed real income target of \$8,000 is drawn until the retirement savings account is exhausted, with provision for taking more income where safe to do so. Under an income optimisation objective (right chart), an ‘affordable’ income is drawn as a function of expected returns and the remaining balance and life expectancy. For further details on the models, refer Butt, et al. (2023)³².

Figure 5: Income percentiles for investing in 100% growth versus 100% risk-free



Assumptions: Mean compound real return of 6% for growth and 1% for risk-free; growth standard deviation of 15%; calculations for balance at retirement of \$100,000; \$8,000 drawn under income target until account exhausted, unless higher income can be safely drawn; ‘affordable’ income drawn under income optimisation reflecting expected return and remaining balance and life expectancy.

³² Butt, A., Khemka, G., Lim, W. and Warren, G. 2023. “Primer on Retirement Income Strategy Design and Evaluation”, *Society of Actuaries Research Report*. Available at: [Primer on Retirement Income Strategy Design and Evaluation | SOA](#).

The first point to arise from Figure 5 is that the median income for the growth portfolio well-exceeds that arising under the risk-free portfolio. Under an income target, median income is exhausted at age 86 for the growth portfolio versus age 79 for the risk-free portfolio. Under income optimisation, median income for the growth portfolio sits above that under the risk-free portfolio by a factor of around *2-times*. We also see that the bulk of income distribution for the growth portfolio sits above that generated from the risk-free portfolio, often by a substantial amount. This indicates that the growth portfolio delivers a significantly higher probability of generating more income, along with the chance of generating much greater income.

However, further examination confirms that the growth portfolio delivers worse outcomes in the lower tail. Under an income target, the 5th percentile lines indicate a 5% chance of income running out as early as age 76 for the growth portfolio, versus being sustained with certainty until age 79 for the risk-free portfolio. Under income optimisation, the 5th percentile income for the growth portfolio sits meaningfully below that for the risk-free portfolio after age 68.

The bottom line is that the member has a meaningfully higher likelihood of receiving a better income outcome by investing in growth assets than defensive assets, and potentially a very much better outcome. However, there are no guarantees. There always exists some modest risk of an even worse outcome when taking on more investment risk.