RETIREMENT INCOME
A FRAMEWORK FOR A COMPLEX PROBLEM
MARCH 2015
The release of the report from the Financial System Inquiry (FSI), with its emphasis on retirement incomes, is set to intensify the industry’s focus on how best to tackle the retirement conundrum. Specifically we note the FSI report’s comment that the industry should seek broad agreement on a primary objective for the superannuation system “to provide income in retirement to substitute or supplement the Age Pension.”

Despite increasing product innovation in recent years, the appropriate solution to comprehensively deal with all risks retirees will face, remains unclear. We believe part of the reason for this is the level of complexity involved, with the need to consider a multitude of risks and preferences that matter to retirees.

Since considering retirement trends across the Australian industry in 2014, we have seen increased emphasis on the need for more innovative products that meet the needs of differing pension members. Indeed many fund managers have begun to release new investments products that focus on the needs of retirees (or rebadge existing products to highlight the ways they may suit pension options). Figure 1 highlights the range of retirement strategies that we typically see in this market. While investment based solutions continue to dominate, a growing appreciation for the role non-investment based solutions can play has resulted in emerging innovation is areas such as longevity pooling. The recent launch of Mercer’s own pooled longevity solution – LifetimePlus – is evidence of this trend.

Figure 1 – Retirement Product Innovation
Despite the ongoing emergence of more tailored strategies for retirees, it all feels somewhat incomplete given the industry is yet to determine an appropriate set of retirement income objectives for pension members. While there is a growing appreciation that we need to empower members to be more self-supporting in terms of their income in retirement, the “wealth maximisation” mind-set and emphasis on outperforming CPI still prevails. Until we develop relevant, specific and measurable retirement income objectives, it will be very difficult to determine, with any confidence, the strategies and products we should establish to meet their needs. The fundamental importance of setting clear and meaningful objectives, which has particular relevance in the retirement phase, was highlighted recently in Mercer’s Top 10 Actions for Superannuation Providers in 2015.

We have seen some progress on this front in recent years with the development of the ASFA Retirement Standards (including the recent release of standards for older retirees) and the increasing use of replacement ratios (particularly in the design of lifecycle options). These improve greatly on traditional rules of thumb, such as the “golden rule” (you’ll be fine if you only take a 4% annual withdrawal of your balance at retirement), which have been shown to be too simplistic and would have failed in many markets around the world over the last 100 years. Another example is the large portion of retirees that simply take the minimum drawdown each year, which is likely to be overly conservative (particularly in the earlier, more active years in retirement). The FSI report suggests that this is often chosen by retirees because they fear they will run out of money.

Unfortunately, the new breed of objectives fall short by failing to consider important differentiating factors between member segment groups (such as retirement balance and Age Pension entitlements). Replacement ratios become less relevant in the retirement phase where an individual’s balance is largely set in stone and acts more as an input to analysis. While very useful as universal yardsticks, the absolute nature of the ASFA Retirement Standards mean they are of limited use when it comes to making meaningful comparisons between different products or solutions. This is because, irrespective of the strategy employed, if a member has a low balance at retirement they will invariably fail to meet ASFA Comfortable over a sustained period, whereas a member with a very high balance at retirement will usually pass with ease.

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We need to be able to understand the level of retirement income that can reasonably be expected for different types of members, and we need to be able to test the implications of adopting different retirement strategies relative to these income targets. Unless we develop clear objectives and a strong framework for comparing different products and solutions, the industry is unlikely to satisfactorily solve the retirement conundrum we face today.

The remainder of the paper describes a framework that Mercer has developed to help cut through the inherent complexities involved in the retirement phase. The framework allows us to test the efficacy of different retirement strategies against criteria we know to be important for retirees.

**ENHANCED MODELLING CAPABILITIES**

At the outset, we realised that we needed to extend our modelling capabilities to enable us to assess retirement strategies in a manner that captures the many variables relevant to this phase. Following significant development work, we now have the ability to not only stochastically model the distribution of return and risk outcomes a retiree can expect over their whole life (including the retirement phase), but also enables us to capture key member characteristics (age, gender, balance size, income target, life expectancy, etc.)

Given the Australian Age Pension is means tested, we have also built the eligibility rules into our model in order to understand the level of income support people are likely to receive under different circumstances. This provides a more complete picture of the expected risk, return and income distributions a member can expect in retirement. Crucially our model allows us to capture the path dependant nature of returns, enabling it to gauge the potential sequencing risk associated with a given strategy.

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1 Post Retirement – Trends in Australia (Mercer – July 2014)
2 Superannuation Perspectives – Top 10 Actions for Superannuation Providers in 2015
THREE PILLARS OF MERCER’S RETIREMENT INCOME FRAMEWORK

Underlying our retirement income framework are three pillars which we have found to be fundamental to any comprehensive analysis of the retirement phase.

• Adequacy
• Sustainability
• Behavioural Finance

1. Adequacy
It is important to recognise that adequacy is subjective – what is adequate to one person can seem either luxurious or pauperly to others. On this basis our approach has been to ensure our adequacy test allows us to define the levels of income required to afford “essentials” and “extras” and incorporates both an absolute and variable component.

2. Sustainability
Naturally, retirees want security that their income is going to last and given our improving longevity; this is becoming an increasing concern for them. In a 2014 Mercer survey, we found that two in three retirees are concerned about outliving their savings and most of these are living frugally in an effort to make their money last longer in retirement. It is clear that income adequacy and sustainability are inextricably linked and that any analysis needs to consider them both in tandem. In this respect, under our sustainability test, we prioritise ensuring a given retirement strategy will allow us to sustainably afford the “essentials”, while also seeking to maximise the probability of being able to afford the “extras”.

3. Behavioural Finance
We quickly discovered there was a tension between what we might believe a retiree “needs” (in order to give them the best chance of a sustainable and adequate income) and what a retiree actually “wants” (generally less risk and more certainty). Given the demand led nature of the retirement space it is critical that the wants of retirees are captured alongside their needs when creating the framework that will be used to measure the likely success of various retirement strategies.

This brings us to the third pillar of our framework, which references an area that is perhaps less well understood by the industry – behavioural finance. This pillar seeks to address the preferences and decision making process of retirees. We know that retirees become more conservative with age, which manifests itself in not just an aversion to negative returns but also in a tendency to be too frugal for fear of running out of money. There is considerable evidence that large negative returns can engender poor decision making and risk locking in losses at the wrong time. No doubt this is an area that will expand as additional research comes to light.

Appropriate measures for each pillar are discussed in more detail on the next page.

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Adequacy and Sustainability

Traditionally, sustainability measures considered the probabilities of financial “ruin”, which, in the context of the Australian system, means they have exhausted their savings and are fully reliant on the Age Pension. However, this discounts the benefits of products or strategies that explicitly target longevity risk and can mean that a member will never actually run out of money or risk “ruin”. On this basis, our analysis focuses on the probability of falling short of prescribed income targets, where we prioritise having enough for essentials while maximising the probability of being able to afford extras. This is consistent with the “hierarchy of needs” mind-set that we know can assist retirees when thinking about their income needs and risk tolerance in retirement.

Our framework considers the probability of falling short of our defined minimum level of income (to afford "essentials") at all ages to ensure this income is expected to last for life. We also test the probability of falling short of a target level of income (that aims to provide for both essentials and extras) with reference to a conservative mortality threshold (as per the dark blue line in Figure 2).

This acknowledges that we don’t need to be as certain that the higher level of income (a stretch target) will last for life, while emphasising the early phase of retirement when members are more active and face lower mortality rates. Clearly we would not be happy if our mechanic informed us there was a 50% chance of our car breaking down before the next service. This thinking is especially relevant for something as important as a person’s income in retirement. Accordingly, we believe it is prudent to use a more conservative threshold than one that means there is still a 50% chance a person will fall short of their targeted income level by the time they reach their life expectancy. To account for this we have developed a “Conservative Mortality” threshold, which seeks to ensure we have a greater than two-thirds chance of meeting our income target at life expectancy age. Targeting a 67% probability brings the level of certainty sought in line with current industry practice when testing whether accumulation phase strategies are likely to meet their CPI target. As illustrated here, we also believe that, ideally, the probability of falling short of our income target shouldn’t fall below 100% while three-quarters or more of the population are still expected to be alive.

Figure 2 – Increased Confidence of Funding to Life Expectancy

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4 ‘Expectations vs Reality of Retirement – Mercer Survey July 2014
5 Australian Life Tables (’05-’07) with mortality improvements included.
As discussed, adequacy is always going to be somewhat subjective. The following chart illustrates how the ASFA comfortable standard (approx. $42k p.a. for singles) might well be an achievable target for a member starting out with a balance of $500,000 (dark blue) or $750,000 (light blue) at retirement. However, this is much less attainable for somebody starting out with $100,000 (red) or $250,000 (orange) at retirement as they are likely to fall short of that absolute income target well before they reach their life expectancy (even including their Age Pension entitlement). In these cases the ‘probability of income shortfall’ (red and orange lines) are significantly outside (to the left) of our conservative mortality threshold (dark line).

Figure 3 – Likelihood of Sustainably Funding the ASFA Comfortable Standard
ASFA Comfortable (Average Allocated Pension SAA)

In Figure 4, we consider what level of annual income is sustainable for an Australian retiree with a balance at retirement of $250,000. While the sample balance size used in our modelling is above stated averages for males (~$200k) and females (~$112k) in Australia today, it is a reasonable benchmark for the level of retirement savings we expect individuals to have in the future. To develop a minimum and target withdrawal rate that has both an absolute and variable component to it, we take the ASFA Modest Standard (approximately $23k p.a. for singles) as our minimum absolute annual withdrawal target. We note that, for the majority of members retiring today, the ASFA modest standard is almost entirely achieved via a full Age Pension entitlement (approx. $22k p.a.). To this we add a variable component that reflects a percentage of a retiree’s original savings balance.

Note: Average Allocated Pension SAA (approx. 60% growth) is sourced from Super Ratings survey – March 2014

6 An Update on the level and distribution of retirement savings (ASFA – March 2014)
We have determined the variable component based on what our analysis suggests members can reasonably expect to withdraw each year, while ensuring the overall target is of a level that enables meaningful comparisons between different strategies (i.e. neither too easy, nor too difficult to attain).

The chart that follows illustrates that withdrawing the ASFA Modest Standard +2%, 3% or 4% of the starting balance is likely to be overly conservative (remains comfortably within our threshold). Therefore, the member in question should seek to improve their living standard by withdrawing more. Conversely, we see that a withdrawal rate equal to Modest +6% of the starting balance each year (red line) is too aggressive and is not likely to be sustainable.

Under our framework, we assume an annual withdrawal rate of ASFA Modest +2% of a member’s balance at retirement is our minimum income threshold (i.e. enough to afford “essentials”) whereas ASFA Modest +5% appears to provide a meaningful income level for members to target that will allow them to afford the “extras” they would like. The table in Figure 5 helps provide some context as to what these minimum and target income levels represent in dollar terms for retirees with different savings balances. It highlights the limits of using the ASFA Retirement Standards in isolation given retirees with varying balance sizes will have a different perspective on what is the minimum level of income they would be willing to accept.

Figure 4 – Optimising Income in Retirement
$250k Balance (Average Allocated Pension SAA)

Note: Average Allocated Pension SAA (approx. 60% growth) is sourced from Super Ratings survey – March 2014
While the illustrations in Figures 3 and 4 have assumed a traditional investment strategy is employed, our framework allows for the inclusion of other retirement income strategies (such as annuities) or mix thereof.

**BEHAVIOURAL FINANCE**

The behavioural finance pillar is crucial and ensures our framework is not overly reliant on investment theory or automatic assumptions of rational investment decision making. Numerous surveys of retirees highlight their increased conservatism with age. In particular, the Retirement Income Survey completed by Investment Trends Pty Ltd in 2013 highlighted that outliving their savings (longevity risk) and falls in investment markets (downside risk) were amongst the top three worries for retirees – the third was having enough left for aged care costs. This differs somewhat from common wisdom, which often focuses on retirees desire to leave inheritance, a preference that rated much lower on their list of concerns. This was further reinforced by the factors retirees said would drive their product selection, whereby flexibility, control, and estate planning, although important, actually rated much lower than the ability to provide more certainty, an income for life, downside protection, minimum income guarantees and keeping pace with inflation.

To capture the risk from falling markets, our framework considers the degree of downside risk (or negative returns) in the expected distribution for a given strategy. It’s somewhat subjective and therefore debateable as to what the threshold (maximum negative return) should be. However, surveys of retirees suggest that double-digit negative returns can be quite confronting and often result in poor decision making. While other surveys point to complete intolerance for negative outcomes, we believe this would prove far too restrictive and would preclude strategies from balancing the conservatism of retirees against the first two measures – adequacy and sustainability.

The essential point is not so much what the threshold should be, but that one exists and can act to prevent us from creeping up the risk curve (which we might be tempted to do, especially for members with low balances, by simply looking at their expected average outcomes). Although not directly considered in our framework approach, behavioural finance learnings can also be a crucial input to successful product design and communication with retirees.

There are a myriad of more qualitative checks that should also overlay retirement strategy design and product choices. This includes placing an emphasis on simplicity – or ensuring that complexity is dealt with “under the hood” and can be adequately explained in simple terms to members. The provision of an income for life and/or the presence of minimum income guarantees are also clearly desirable and may empower members to spend and live more comfortably in retirement. We expect this will be an area that receives increased focus as part of the broader discussion about suitable retirement income solutions.

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**Figure 5: Different Perspectives on Income Adequacy**

<table>
<thead>
<tr>
<th>INCOME LEVEL</th>
<th>BALANCE SIZE</th>
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<tbody>
<tr>
<td></td>
<td>$100k</td>
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<tr>
<td>MINIMUM THRESHOLD</td>
<td>ASFA Modest +2% of member balance at retirement</td>
</tr>
<tr>
<td>TARGET INCOME</td>
<td>ASFA Modest +5% of member balance at retirement</td>
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*Note: ‘ASFA Modest’ in the above table is based on the retirement standard for a single person – annual income of $23,489.*
CONCLUSION

The range of competing forces involved in any analysis of the retirement phase can make it a complex area to navigate effectively. This has led Mercer to develop a framework that allows us to cut through the underlying complexity and more appropriately target the needs of retirees in our analysis of different retirement strategies.

While investment solutions continue to dominate the Account Based Pension market in Australia today, the industry’s understanding that we need to do more to improve members’ retirement incomes continues to deepen with ongoing research into the retirement phase. The development of new and innovative products is only half the battle – it doesn’t help us determine the mix of solutions we should employ or what the appropriate allocation to each is.

Helping us answer these questions is at the core of Mercer’s retirement income framework which provides clear, specific and measurable objectives for retirement strategies in terms that are relevant to retirees. Our framework offers a robust and systematic approach to defining income adequacy and gauging its sustainability, while also incorporating some crucial learnings from behavioural finance. The enhancement of our stochastic modelling capabilities to test different retirement strategies against these objectives also ensures we can capture essential member characteristics (including a person’s Age Pension entitlement) and allows for more meaningful comparisons. Future papers will discuss how best to tackle the construction of retirement strategies and develop pension offerings with sufficient flexibility to meet the needs of differing member segments.

Our framework offers a robust and systematic approach to defining income adequacy and gauging its sustainability, while also incorporating some crucial learnings from behavioural finance.
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