

Submission

This represents The Conexus Institute's submission to the Retirement Income Review. The Conexus Institute is a not-for-profit entity which strives to improve the retirement outcomes of Australians through a focus on impactful research.

This submission was prepared by David Bell, Executive Director of The Conexus Institute. We note with appreciation the voluntary contributions made to this submission by Luke Zhou and Annabelle Tian, who are both tutored retirement system courses taught at UNSW.

Introduction

The Conexus Institute seeks to support the objective of the Retirement Income Review, which is to develop a fact base of the current retirement income system. A well-compiled fact base has the opportunity to better inform future policy research.

This submission consists of a summary paper which is supported by ten individual essays. Essays are designed to provide an informative insight into a topic we believe relevant. Throughout this submission we are cognisant of the four principles of adequacy (**A**), equity (**E**), sustainability (**S**), and cohesion (**C**).

The breadth of the retirement system makes it impossible to consider every issue. Nearly as important as what we have addressed is what we have not addressed and why:

- We do not address the appropriate level of the Superannuation Guarantee. This is an
 extremely complex area. To address this question properly requires some important inputs:

 an objective (preferably quantifiable) for the retirement system; (2) an assessment of the
 integrated role of all components of the retirement system (for instance age pension, taxes
 and incentives, the role of housing, and other payments such as rent assistance); and (3) a
 strong understanding of consumption needs of Australians through their working lives (to
 ensure we are not undermining their working life living standards).
- We also placed aside taxation of superannuation. It is often highlighted that Australia runs a T-T-E style of tax system (or T-t-E, as described by <u>Holzmann and Genser (2019)</u>) while many other countries run an E-E-T structure. The appropriate taxation system goes well beyond a global comparison as it needs to consider the structure of the savings pillar and the social security pillar. There are specialists who can provide better insight than us on this issue.

Essays titles

Essay	Essay title	Principles addressed
1	Best practice in retirement modelling and assessment	A, S, C
2	Illustrating the dangers of deterministic modelling the case for reduced	A, S, C
	consumption to achieve a reasonable degree of certainty	
3	Consumption in retirement	A, S
4	An integrated retirement system focused on household outcomes?	A, E, S, C
5	The need for a retirement system objective	A, E, S, C
6	The incoherent role of housing in the retirement income system	A, E, S, C
7	Does the term 'retirement income' mislead?	A, E, C
8	'Lottery effects' in the superannuation system	A, E, S
9	Exploring market failure in retirement solutions	A, E, S, C
10	The critical shortage of quality financial advice and guidance	A, E, S

Reflections

We share three reflections with the Review:

- Throughout the production of this submission we found ourselves constantly returning to the foundational framework of the lifecycle model of consumption, savings and investment. Starting with this framework, and overlaying it with the idiosyncrasies of Australia's retirement system provides great insight into the current design, challenges and potential improvements to Australia's retirement system.
- 2. Australia's retirement system lacks an objective. Without an objective it is impossible to optimise outcomes, determine welfare benefits of policy changes, and participants in the system find it harder to understand their role. The development of a quantifiable objective for Australia's retirement system would represent an outstanding achievement.
- 3. Australia's retirement system is complex with many components which are intertwined. It is extremely difficult for consumers to navigate this complexity and have confidence in their retirement financial position. We believe much more can be done in the area of financial guidance. This could be achieved without the need for substantial policy change.

We are happy to further discuss our research in these or related areas. We are happy to share our models.

Sincerely,

David Bell

Essay 1 – Best practice in retirement modelling and assessment

Summary

- This essay attempts to provide a succinct overview of the retirement outcome challenge, and how to assess and measure retirement outcomes
- The most important concepts covered:
 - The need to think and model stochastically (consider the range of outcomes)
 - The need to think and model intertemporally (consider outcomes through time rather than just the average outcome across time)
 - Develop a metric based on preferences. Best practice here is the use of utility functions.

Introduction

The lifecycle model of consumption, savings and investment underpins retirement planning, modelling and assessment. Theoretically straightforward in concept, modelling retirement outcomes can be highly complex in practice. This creates two challenges:

- To understand the framework and work out appropriate simplifications so that decisions are well-considered and outcomes are close to optimal. Oftentimes, simplifying a complex problem can have a large adverse impact on recommended solutions and associated outcomes;
- 2. To determine how best to communicate assessments made in a complex framework, whether it be communicating with industry or with consumers.

(1) and (2) have an important interaction. There appears a tendency in the superannuation industry to make simplifying assumptions or develop simple solutions. The cost of any decision to simplify needs to be explored. Other industries appear to manage these types of trade-offs¹.

In this essay we outline the lifecycle model of consumption, savings, and investment, and detail some important technical areas which are important for the Review to be cognisant of. These include:

- The need to think stochastically
- The need to think intertemporally
- Integrated decision-making

¹ The car industry makes for an interesting comparison. The technologies involved are highly complex – for example, how do you explain a dual clutch or a CVT transmission? But that hasn't stopped the best technologies being applied. From there the industry has been able to convey key messages: both transmissions are smooth and contribute to good fuel efficiency.

Preferences can also be complex in the respect that there can be multiple components to a preference and these components can 'pull' against each other. It is important to be able to fully reflect a preference that has multiple components. Further, we seek to be able to quantitatively measure outcomes relative to preferences. We explore how this can be achieved using techniques common to academia.

For further references on best practice retirement modelling we recommend <u>Dowd and Blake (2013)</u> and <u>Hennington and Langton (2016)</u>. To understand modelling preferences in more detail we recommend <u>MDUF (2017)</u>.

The lifecycle model of savings, consumption and investment

We briefly introduce the theoretical foundation of retirement savings: the lifecycle model of consumption, savings and investment. The starting point is that people work and consume in the present, but acknowledge that they would like to consume over their entire lives. In anticipation that they will not want (not be capable) to work all of their lives, they choose to save a portion out of present consumption to fund future consumption once retired. Saved funds are invested. Figure 1 provides a basic overview:



Figure 1: Basic lifecycle model. An individual earns constant income (AWOTE) throughout their unbroken working life. They constantly save (in this case 9.5% of their wage) and then draw down on these savings in retirement (which begins at 67). The individual is modelled to live for exactly 25 years in retirement. Inflation is assumed to be a constant 2.5%.

In essence Figure 1 reflects the concepts of human capital (the present value of future wages) and financial capital (current savings). The lifecycle model illustrates how we consume from realised human capital, and save some, converting it into a pool of financial capital which is drawn down once we stop working (note that not working results in leisure which has value as well).

A model such as that detailed in Figure 1 would best be enhanced with many additional considerations to make it more realistic. Of course, each element increases the complexity of the model. A non-exhaustive list of such considerations includes:

- Labour career path, wage profile of specific industries, retirement intentions, transitioning to retirement etc.
- Savings / consumption savings vehicle, expenses through different stages of life, buy or rent considerations etc.
- Product choice super, home, other investments, retirement solutions etc.
- Investment decisions level of risk and underlying asset class selection
- Government interventions taxes applied to different forms of saving and investment, incentives, social security
- Mortality life expectancy, health status etc.
- Household status single or couple

The need to think stochastically

Deterministic modelling means we assume all outcomes are certain. The alternative approach is to model stochastically, whereby all sources of variability are accounted for. Consider the more advanced model in Figure 2.



Figure 2: Extended lifecycle model incorporating wage growth (1% real), investment returns (3% real), taxes (PAYG and contribution tax) and the age pension (means-tested).

Under such a model it appears we have reasonable retirement adequacy (a replacement rate of X% of consumption in working life). Consider the assumptions underpinning this outcome:

- We assume we will earn the same investment returns each year
- We will die with certainty at 92, enabling us to fully exhaust our retirement savings
- Other assumptions relating to employment, wages etc. which we don't explore

Each simulation of a stochastic model will produce a unique, but possible outcome. The consideration of many possible outcomes provides fuller insight into the distribution of possible outcomes. Four simulations of a model which considers investment returns and mortality outcomes to be uncertain and variable, are provided in Figure 3.



Figure 3: Four simulated lifecycle outcomes in a stochastic framework. The individual takes a deterministic retirement forecast as guidance and uses this as the target level of consumption in retirement.

What are some of the ramifications of not thinking stochastically? Using retirement projections / adequacy as a backdrop, there are several important ramifications:

- A projection established in a deterministic environment is only a median outcome. Effectively there is a 50% chance of a better retirement outcome and a 50% chance of a worse retirement outcome.
- 2. The range of adverse retirement outcomes (those less than the deterministic projection) are not fully explored. Some possible outcomes may not be acceptable, and this may inform how the consumption / investment strategy is managed and also policy design.
- 3. The range of favourable retirement outcomes (those above the deterministic projection) are not fully explored. Some of these outcomes may create challenges when viewed through the Review's principles of equity, sustainability, and cohesion.

Think intertemporally

The term 'intertemporal' implies across distinct periods of time. To think intertemporally means to think across multiple periods of time. This creates a range of considerations, including:

- 1. We would consider the outcome in each period of time rather than the average outcome across a range of time periods.
- 2. While we consider the impact of present decisions on future outcomes, we are also cognisant of the future decisions that will be made.



Let's explore (1) in a little further detail. To do so consider Figure 4.

Figure 4: Three retirement income scenarios.

Note that in Figure 4 each case study has the same average annual retirement income (\$50,000). Case 1 represents constant income, Case 2 a variable income profile, and Case 3 an income profile which is marginally higher for all but the final year where it is sharply lower. Which profile is most desirable for a retiree? Case 1 appears most desirable as the retiree doesn't have to regularly adjust their spending patterns. It is difficult choose between Case 2 and Case 3. If the assessment does not account for the intertemporal experience then it may miss assessing an important aspect of the retirement outcome. Any assessment approach based on an average over time may prove misleading.

Now let's explore (2) in further detail. Consider the manufactured scenario whereby we face a oneoff return shock (-20%) with no expectation of a recovery (in all other periods we earn a real 3% pa). For this simple example we assume no age pension. Two scenarios are considered in Figure 5.





In Figure 5 we see two ways that a return shock is accounted for. In Case 1 we don't account for any reassessment in consumption, and so the retiree's consumption profile 'falls off the cliff', experiencing no consumption in the last few years. In Case 2 we account for a reassessment in consumption and the impact is less extreme. If we consider the experience of the two retirement lifetime profiles (intertemporal assessment) then it appears that Case 2 is preferable to Case 1. In modelling a realistic retirement lifetime experience we need to incorporate realistic actions through time (incorporate intertemporal decision-making).

Integrated decision making

There are many decisions that an individual may face in retirement. Many of these decisions are integrated. As an example, consider important retirement decisions around the consumption / savings decision and investment. Someone with a high degree of risk aversion, may in some cases choose to reduce consumption and reduce investment risk. They forego some consumption but the overall outcome is now more certain and less risky, and this may be valued by the investor.

An exercise of maximising outcomes by independently determining the optimal investment profile (holding consumption constant) and the optimal consumption strategy (holding the investment strategy constant) will identify the opportunity cost of not determining the optimal strategy in an integrated manner.

Assessing outcomes

Retirement references and retirement objectives are two different things

We begin by noting that retirement references are different to retirement objectives, although the two are often conflated. Consider a retirement reference such as a replacement rate or a consumption standard. These represent poor objectives on their own. How certain do we need to be of achieving the reference? Is it achieved throughout the retiree's lifetime? Are the worse case scenarios acceptable?

Once we accept that we need to incorporate stochastic and intertemporal considerations when we model retirement outcomes, how do we best measure retirement outcome adequacy? We require a metric which can account for the range of through-time outcomes a household may experience in retirement.

Common metrics used in retirement outcome modelling generally fail to match these requirements, as summarised in Table 1.

Adequacy measurement	Description	Accounts for range of outcomes (i.e. stochastic)?	Accounts for the through-time experience (i.e. intertemporal)?
Replacement rate	Average consumption in retirement as a percentage of pre- retirement consumption.	No – just based on median or mean.	No – accounts for average through time.
Shortfall risk	The percentage likelihood of exhausting savings in the pursuit of a targeted level of retirement consumption (e.g. an ASFA standard or a replacement rate).	No – considers the likelihood of exhausting funds but doesn't consider the extent of the shortfall.	No – it doesn't consider the length of the impaired experience.

Table 1: Overview and assessment of common retirement metrics used to assess adequacy.

Utility functions are best practice

The only metric which accounts for the range of outcomes and the through-time experience is a utility function. Utility functions have been used by academics for hundreds of years and used in the field of retirement research for over 50 years. A utility function is a mathematical representation of preferences (in this case retirement preferences). It reflects each individual preference and the trade-off between these preferences (for instance the trade-off between the preference for higher consumption versus the preference for greater certainty of consumption).

The first thing a utility function does is to considers the experience of an outcome. A higher retirement outcome is obviously better, but a lower outcome may be penalised by a larger amount (consider the attainment of luxuries versus the loss of essentials). This is illustrated in Figure 6.



<u>Figure 6</u>: Illustration of utility calculation of a single-period consumption. Source: <u>MDUF (2017)</u>. A utility function also accounts for the lifetime consumption experience, as illustrated in Figure 7.





The application of utility functions to the retirement system in Australia has been heavily explored by the <u>MDUF Working Group (2017)</u>, <u>Warren (2019)</u>, and <u>Khemka et al (2019)</u>.

Some final comments regarding utility functions:

- 1. A utility function can be created to capture other preferences beyond consumption in retirement. One possible example is a bequest motive. A utility function could be developed to address household incomes, not just individual outcomes. The more detailed a utility function the greater its complexity in terms of the formula and its parameterisation.
- 2. Preferences are heterogeneous across the population. In assessing retirement outcome adequacy, it is necessary to establish a 'representative' set of preferences. Guidance tools and financial planners can help to reflect personal preferences into an objective function.
- 3. It is to be expected that individual preferences, even a set of representative preferences, will differ from the preferences of government. Taking the time to explore these differences can help to identify system 'slippage' (between actual versus expected outcomes and associated costs to government) is to be expected and policy actions which may reduce this slippage.

4. While utility functions have great application when it comes to assessing outcomes, they also help to drive decisions, at the levels of policy, industry and advice / guidance.

Conclusions

Best practice assessment of the adequacy, equity, sustainability, and cohesion of Australia's retirement system requires the adoption of approaches which account for the range of possible outcomes (a stochastic approach) and the through-life retirement experience (an intertemporal approach). It is also important to have clear system objectives / preferences; best practice here would be to incorporate these objectives / preferences into a utility function.

Any assessment undertaken without incorporating these features may misrepresent the outcomes of the system, provide a poor assessment of those outcomes, and ultimately mis-inform policy design.

Essay 2 – Illustrating the dangers of deterministic modelling... the case for reduced consumption to achieve a reasonable degree of certainty

Summary

- This paper details a stochastic case study to illustrate the dangers of relying on deterministic modelling when assessing retirement system adequacy
- Maintaining some sort of a consumption buffer to manage risk is rational for individuals and those providing advice, but will create a greater likelihood of scenarios that frustrate government (i.e. bequests); this is the frictional cost when individuals are forced to bear many retirement financial risks
- We believe it is important for policymakers to assess the range of outcomes, and target a degree of certainty for minimum acceptable outcomes

Introduction

In Essay 1 we detailed what we consider to be best practice for modelling and assessment of retirement outcomes. This has importance to the Review, particularly in the area of adequacy. This essay details a case study whereby we take a deterministic finding and test it in a stochastic environment.

The purpose of this case study is to highlight the shortcomings of analysis undertaken in a deterministic environment. A stochastic framework provides far greater insight and provides policymakers with the platform to be fully accountable for the possible impact of their policies.

It motivates the consideration that, in an environment where investors bear much and many forms of risk, it may be appropriate and rational to spend cautiously and reserve some funds, relative to what deterministic models suggest.

Background

We use the models developed for Essay 1, both the deterministic and the stochastic models. A short description of these models:

- Both models:
 - A single person earns AWOTE through life
 - Wage growth is a certain 1% real
 - Inflation is a constant 2.5%

- Our individual contributes 9.5% for their working career, which is assumed to be unbroken
- They retire at the age of 67
- They seek a level of retirement income which is based on guidance they received on their first day of work, determined in a deterministic framework
- o A means-tested age pension is available, the level of which grows with wages
- Superannuation contribution taxes are 15%
- PAYG tax scale is as per 2019 ATO guidelines
- o Tax brackets creep at the rate of inflation
- In the deterministic setting:
 - The individual will live for exactly 25 years in retirement (i.e. die on their 92nd birthday)
 - o Investment returns are a constant and certain 3% real
- In the stochastic setting:
 - The individual faces an uncertain mortality outcome, determined stochastically by applying ABS life tables
 - The individual faces uncertain investment returns. Returns are assumed to be normally distributed with a real expected return of 3% and volatility of 8%
 - The individual draws down their savings at the target rate, accounting for age pension entitlements. If they exhaust their savings they live solely on the age pension
 - o Any account value at death represents a bequest

We acknowledge that this case study could be extended by incorporating minimum drawdown rules. We briefly consider the impact of this later.

The 'deterministic' individual

The deterministic outcome is always the same, unless we change underlying assumptions. In Figure 1 we replicate the figure from Essay 1.



Figure 1: Deterministic lifecycle model.

In the deterministic setting, the level of retirement income is a constant \$75,729 (today's dollars), representing a replacement rate of 83.6%. The individual is assumed to exhaust their retirement savings instantaneously with their passing.

The 'stochastic' individual

Each simulated outcome for our individual in the stochastic setting will be unique. We permit variation in investment returns and mortality outcomes, which creates variation in age pension entitlements. Four sample simulations are provided in Figure 3 of Essay 1.

We perform 1,000 simulations. Figure 2 presents average replacement rate across life (noting, as per Essay 1, the shortcomings in this approach as it fails to consider the lifetime (intertemporal) consumption experience preached in Essay 1. Figure 3 presents a scatterplot of bequest at death plotted against age at death. Figure 4 explores the distribution of replacement rate outcomes.



Figure 2: Simulated replacement rate outcomes. Replacement rates are calculated as an average of lifetime experience.





Figure 3: Simulated bequest outcomes versus age at death.

Figure 4: Distribution of replacement rate outcomes.

Summary statistics are included in Table 1.

Statistic	Outcome
Expected Replacement Rate	83.6%
Average Replacement Rate	73.0%
Standard Deviation	5.8%
1'st Percentile	62.7%
5'th Percentile	64.8%
10'th Percentile	66.3%
50'th Percentile	72.1%
90'th Percentile	83.6%
Frequency (Experience	107
Deterministic Target)	
Mode	83.6%

Table 1: Summary statistics from stochastic analysis (1,000 simulations).

We observe from Figure 2 that, due to the retirement planning approach (targeting the deterministic level each year), the maximum achievable level is truncated to be this target level (83.6%). The 'release valve' for excess savings is the bequest at death, which is captured in Figure 3. The deterministic target proves to be the most frequent outcome (10.7%). However, we can see a large range of observations below this level. The mean replacement rate outcome is 73.0%. Figure 4 reveals a range of outcomes, some far below the deterministic level.

What would happen if we incorporated minimum drawdown rules and/or adopted a retirement planning approach which reassessed the appropriate consumption level based on the present position? We would expect:

• The 'truncation effect' would be removed and we would see a range of outcomes which extends above the deterministic level

- Bequests would likely be lower as cases of high retirement savings (due to good investment returns) would now be reflected (partially) by higher retirement consumption
- Low replacement rate outcomes are still likely to occur. Whether savings are exhausted or spread out won't make too much difference to the average lifetime experience. This reminds us of the importance of an assessment approach, such as a utility function, which assesses the through-life experience

Trading off consumption and certainty

Maintaining some degree of a buffer (by reducing consumption) to manage risk is rational for individuals and those providing advice, but will create a greater likelihood of scenarios that frustrate government (i.e. bequests). Effectively bequests reflect the 'frictional cost' to the system when individuals are forced to bear many risks and act rationally. Additionally, we believe it would be poor policy design not to consider the certainty of achieving a target level of adequacy. In the case study just worked through, we detail some certainty levels in Table 1: 99% certain of a 62.7% replacement rate, 95% certain of 64.8%, and 90% certain of 66.3%.

Reflections

This relatively simple case study is designed to explore the difference in the quality of assessment when retirement modelling is undertaken in a stochastic environment compared with a deterministic environment. It generates reflections for policymakers exploring system adequacy through to super funds and financial planners assessing member outcomes.

The case study suggests that analysis conducted in a deterministic setting may be misleading. Specifically:

- It ignores the range of possible outcomes
- It fails to consider the experience of these possible outcomes
- Due to the way the system works, the average outcome would likely be lower relative to that determined in a deterministic setting (since bequests represent the leakage in the replacement rate calculation)

Ultimately, the foundation of a deterministic projection is the assumption that every uncertain outcome is certain. In our example, the deterministic approach assumes returns are constant and that we know our date of death. We suggest that such strong assumptions are an inappropriate basis for assessing retirement adequacy.

We believe it is important for policymakers to assess the range of outcomes, and target a degree of certainty for minimum acceptable outcomes.

Essay 3 – Consumption in retirement

The Conexus Institute would like to acknowledge Luke Zhou and thank him for his contribution as lead author of this essay. Luke has tutored superannuation-related subjects at UNSW (where he just completed his Honours degree), and will soon begin his career at KPMG.

Summary

- Analysing consumption patterns of retirees is an important part of analysing the adequacy of the retirement system
- Three areas are explored: empirical, theoretical implications, and stated preferences
- Theoretical concerns are important to provide a fuller picture which attempts to rationalise observed behaviour
- Consumption in retirement and related questions of adequacy are more complex than a replacement rate or absolute standard of living measure
- The observation that consumption decreases through retirement appears broad-based

Introduction

We consider a clear understanding of desired and experienced consumption in retirement as foundational knowledge to support retirement system design and modelling. It is a complex and sometimes controversial area. In this essay we explore three areas, explained in Figure 1.



Figure 1: Three sources of insight as to retirement consumption preferences.

We attempt to reconcile any identified differences.

Empirical analysis - overview of Australian surveys on consumption in retirement

Evidence in Australia is derived from three main sources, detailed in Table 1.

Household Expenditure Survey	Household Income and Labour	Milliman Retirement	
<u>(ABS)</u>	Dynamics of Australia (HILDA)	Expectations and Spending	
		Profile (<u>a</u> , <u>b</u> and <u>c</u>)	
 Considers most categories of spending, essential and discretionary Multiple waves of the survey have been run, the two most recent being from 2009-10, and 2015- 16 It does not track the same households over time 	 Only considers essential spending The survey is run yearly, with the most recent being in 2019 (Wave 18) It tracks the same households over time, allowing analysis of how households' consumption change over time 	 Considers all categories of spending Considers demographic features such as wealth, geographical location, and age Conducted in 2017 	

Table 1: Primary empirical sources of household spending in retirement.

We note that a detailed enumeration of the differences between the HES and HILDA surveys in relation to consumption and retirement can be found in <u>Grattan (2019)</u>.

From the three empirical sources detailed in Table 1 we make the following important observations:

- Older retirees spend less than younger retirees
- Relatively constant spending on essentials (in real terms)
- Health spending moderately increases with retirees' age

Additionally, we note that:

- The ABS survey finds lower discretionary spending for older retirees
- The HILDA surveys confirm that retirees' spending remains relatively constant due to measuring only essentials, with a small increase for singles over time
- The Milliman ESP finds that retirees in all wealth bands save during retirement
- The Milliman ESP finds that retirees in urban areas consume more than in rural areas

Many of the findings that we provide can be found in the following references on empirical studies in retirement: (<u>Daley et al. (2018)</u>, <u>Ding (2013)</u> and <u>Minney (2018)</u>). We note that findings in the US appear similar, (see <u>Hurd and Rohwedder (2011)</u> and <u>Blanchett (2014)</u>). This pattern of reduced spending through retirement is known amongst academic researchers as the 'retirement consumption puzzle'.

There are a range of issues related to empirical data on consumption in retirement. We note two of these:

• So-called 'cohort effects', where different generations of retirees have different consumption patterns, are able to be controlled for. This is done through considering multiple waves of the HES and HILDA surveys. The HILDA survey is more accurate in this

regard since it tracks the same individuals over time, whereas changes are taken from population averages in the HES.

 Survivorship bias, whereby surveys capture only the (healthier) retirees who are alive throughout multiple iterations of the survey. These healthier retirees may have very different consumption patterns to unhealthier retirees who have died early. One hypothesis is that those who are healthy live longer and consume more (<u>Daley et al. (2018)</u>). Another hypothesis is that healthier retirees consume less, as they have longer lifetimes and so need their accumulated assets to last for a longer time. This may also pose a problem with investigating health costs, as younger retirees who are in poor or declining health are not captured by the surveys.

Lastly, this section summarises consumption patterns in a descriptive manner. It doesn't tie this to potential reasons why retirees have such patterns, which will be examined further in the next section. We do note that <u>Daley et al. (2018)</u> identify that despite the fall in consumption at and through retirement, retirees report high levels of happiness.

Theoretical considerations on consumption through the lifetime

Theoretically, the foundation of retirement outcome modelling is the lifecycle model of consumption, savings and investment. The underlying assumption is that people seek to smooth consumption over their lifecycle. This is reflected as an objective rather than a strict requirement. The objective is reflected by an objective function (or what is known as a utility function – a mathematical construct which assess the consumption experience in each period) which is maximised when consumption is constant through time.

There are a number of assumptions which underlie the use of such functions. Common assumptions are that retirees are forward-looking, they plan rationally for a high, constant level of consumption as long as they live (the age of death is uncertain), and they have no bequest motive, which means that they do not wish to leave an inheritance (Yaari, 1965). This model also assumes that insurance products are available to hedge the risk of a retiree's uncertain lifetime. Such products, if priced efficiently offer higher returns than comparable assets such as bonds due to mortality credits (Davidoff et al, 2005). Under these assumptions, a retiree will fully annuitise, and therefore consume a flat amount in retirement throughout their remaining lifetime.

This result, flat consumption, is not always the case, even if we maintain the assumption of rationality. As we vary our assumptions we observe changes to optimal consumption profiles.

An important case study is to remove the availability of life annuities. The case of no life annuities is well-researched; we use two papers to illustrate the general finding that it is rational in this circumstance for consumption to fall through time. <u>Cannon and Tonks (2008)</u> identify that the existence of a time preference for consumption (people prefer to consume now rather than later, especially if there is a chance of not living to enjoy future consumption). <u>Milevsky (2011)</u> identifies that an individual faced with mortality risk (year-to-year mortality rates increase throughout retirement) is motivated to enjoy more certain consumption early in retirement. An appropriately designed utility function captures both of these issues.

We now consider the extension that retirees are not necessarily forward-looking. They may set their present consumption with reference to their past consumption, a phenomenon referred to as habit

formation (first introduced by <u>Constantinides (1990)</u>). Here, investors place higher utility on a gradually changing consumption pattern over time compared to a consumption pattern with large fluctuations. Practically, it suggests that people prefer to change their consumption habits gradually and find large changes difficult to deal with. The academic research shows that in this case some level of annuitisation is appropriate since it is the financial instrument which can provide consistent income through life (see <u>Iskhahov (2015</u>) for further insight).

In our final theoretical extension, we consider bequest motives. Evidence of a bequest motive exists (see, for instance, Lockwood 2014), but the strength of motives is debatable (see Alonso-Garcia (2017)). A bequest motive reduces rational demand for life annuities, since they provide no bequest. Where life annuities are unavailable, MDUF (2017) identified a moderate hump-shaped consumption profile whereby a retiree may initially forego a small amount of consumption in the hope of growing their overall retirement account (which benefits future consumption and also bequest motivations). Best practice modelling would be to separate out other planning issues such as liquidity requirements and reversionary benefits rather than wrap them into a bequest motive; the trade-off here is model complexity.

In summary, the classic theoretical framework used in the academic literature sheds light on consumption patterns by linking these to assumptions of retirees' motives and behaviour. We see that the assumption of constant consumption through retired life only applies in very restricted circumstances (no bequest motives and fairly priced annuities). Otherwise a downwards sloping consumption profile represents a rational decision.

Retirees' stated preferences with respect to consumption

In an experiment conducted in the US, retirees were found to prefer flat real income streams as opposed to flat nominal income streams (<u>Beshears et al 2014</u>). This is consistent with the empirical evidence of flat consumption in real terms in earlier years in retirement (<u>Minney 2018</u>).

In contrast, <u>Beshears et al (2014)</u> also found a greater preference for rising real income (50% of respondents), as opposed to flat real income (32% of respondents). This contradicts the empirical evidence of consumption in Australian and US surveys. One possible reason for this difference is that retirees overestimate their consumption needs in old age, possibly because of the lack of long-term-care insurance to hedge uncertain, large, health expenses.

<u>Beshears et al (2014)</u> found that providing retirees with information about the effects of inflation led to an increase in the number of retirees wanting a COLA (cost of living adjusted) annuity. <u>Beshears et al (2014)</u> identify that retirees have preferences for flexibility in consumption throughout time (retirees prefer large bonus payments at particular points in the year).

A final reflection on <u>Beshears et al (2014)</u> is that it focuses on income preferences in retirement, not consumption. Constant income in retirement may be a convenient preference, and perhaps one which defers having to acknowledge a lifestyle which will become less active.

Conclusion: reconciling the evidence

There is strong empirical evidence that household consumption falls through retirement. This is despite stated preferences for increasing income in retirement. Perhaps the reality is different to the

expectation – lifestyles change and people have more time for leisure. There is little evidence that Australian retirees are less happy in retirement; indeed, it appears the opposite. The theoretical foundation is consumption smoothing across lifetime, so a flat consumption profile through retirement. However, more detailed models reveal a range of reasons for why it may be rational to consume less through retirement.

We express caution that the theoretical reasoning matches the empirical observations by coincidence. Perhaps the empirical observations are more about lifestyle changes than rational decision-making. What is important is that we do not find any evidence that the profile of falling consumption through retirement is driven by financial constraints.

Overall, we find that retirement consumption and related questions of adequacy are more complex than a constant replacement rate or a fixed absolute standard of living measure. An assumption of declining consumption in retirement appears defensible, but one of constant real consumption feels more appropriate for adequacy assessment.

Essay 4 – An integrated retirement system focused on household outcomes?

The Conexus Institute would like to acknowledge Annabelle Tian and thank her for coauthoring this essay. Annabelle has tutored superannuation-related subjects at UNSW, and will soon begin her career at IAG.

Summary

- Most parts of the retirement system focus on individual outcomes rather than household outcomes. Superannuation is the exception, being a system largely based around individuals
- It is difficult for uninformed households to make informed decisions in a complex system, and to have confidence in those decisions
- Present solutions such as retirement income estimates, guidance and financial advice are challenged from the perspective of provision and dealing with the complexity of the challenge
- Improving the provision of, and quality of retirement income estimates, guidance and advice is essential for improving outcomes and confidence in the retirement system

Components of the retirement system – individual or household focused?

In this section we analyse the components of the retirement system and comment on whether they are designed around the individual or the household. We begin with a re-production of a figure from the Retirement Income Review Consultation Paper.



Figure 1: Components of Australia's retirement income system (reproduced from Retirement Income Review Consultation Paper).

We now consider each component in Figure 1 and whether it is focused on the individual or the household.

The age pension system is focused on the household. Means testing and the level of payment are based on a household assessment.

Superannuation, by comparison, is largely focused on the individual. From an operational perspective superannuation is based on individual accounts. Taxation and contribution rules tend to apply at an individual level with the notable exception of spouse contributions. During the retirement phase the most common structure is the account-based pension, which is an individual account. SMSF's represent a partial exception, as the assets of both members of a couple can be combined into a coordinated investment strategy.

Voluntary savings through superannuation is captured through the same individual account structure. There is an opportunity to optimise the tax effectiveness of voluntary contributions across a household.

The home is treated as a household asset through principal place of residence rules. Investment properties, financial and non-financial investments are all household decisions and taxed accordingly.

Superannuation is distinguishable as the only form of retirement savings which is not structured around the household.

Household considerations

There exists a range of considerations for a household during accumulation and drawdown stages, as outlined in Table 1. It is also important to be cognisant of integrated decision-making; ideally all these decisions would be made in consideration of each other. The non-exhaustive list of considerations highlights the complexity faced by households.

	Labour decisions	Savings / spending decisions	Investment decisions	
Working (accumulation)	 Labour provision (full or part-time) Career breaks Education 	 Trade-off between savings and consumption Additional savings (above SG) Home purchase Savings optimisation: tax, liquidity 	 Super (default or choice) Other forms of savings 	
Retired (drawdown)	Part-time work	 Consumption versus retirement certainty Existing debt (e.g. mortgage) Role of age pension Preferences including reversionary benefits and bequest motives Health status Specific rules such as minimum drawdown rules 	 Choice of retirement products Investment decision (if using an ABP) Other forms of savings 	

Table 1: Household financial considerations

Problems created

Adverse outcomes are represented by the opportunity cost of sub-optimal consumption and investment decision-making at a household level. The primary driver of such sub-optimal decision-making is the inability to incorporate a range of complex information into an aggregated household decision. The constraints imposed by tax and product rules will have some adverse impact, but we consider this impact small. We believe that most problems evolve in the drawdown phase as this is where the decisions are complex and multi-faceted, where guidance is modest and where default solutions fail to deal with the issues faced by heterogeneous households. When we refer back to Table 1, we can see that:

- 1. Default arrangements (namely the SG and default options) provide strong foundations during the accumulation phase
- 2. The range of decisions faced in retirement are more complex, affected by personal preferences, and are supported by foundations which have been subject to less policy review (account-based pension (ABP) and minimum drawdown rules)

Guidance and advice

Guidance and advice have the potential to assist households navigate the complex decisions they face. Consider the current guidance and advice available to individuals and households:

- Retirement income estimates (RIE's): provided by 42% of super funds, entails a basic retirement income projection. RIE's are usually based on <u>Class Order [CO 11/1227]</u> Relief for providers of retirement. The required assumptions produce forecasts which may be quite different to an estimate based on the true position of the household. The projections of two individuals of a household will likely never (even if household asset assumptions prove correct) be the same as the aggregated household forecast (see Liu et al (2016)). Unfortunately, if two members of a household are in the same super fund, the super fund cannot provide a household forecast within the class order.
- Guidance tools: around two-thirds of super funds provide calculators which allow for user input around assumptions (exemption from licensing requirements and conditions by <u>ASIC</u> <u>Corporations (Generic Calculators) Instrument 2016/207</u>). Our anecdotal review of these calculators identifies <u>ASIC's MoneySmart Retirement Planner</u> as one of the more detailed calculators. All calculators appear to be deterministic and fail to account for all assets of the household.
- **Financial advice**: the current structure of the advice industry means that advice is largely only accessed by higher wealth households. Comprehensive financial advice should capture the complete household financial position. However, the financial planning tools used by planners are often deterministic (not stochastic) and hence are not well equipped to assess the certainty of an outcome and incorporate a household's specific profile around objectives and certainty into a plan. One example of advanced household modelling is joint mortality modelling (again, Liu et al (2016)). This example highlights both the complexity and the importance of accurate modelling.

These areas of advice and guidance are explored further in Essay 10. Our observations are that presently quality cost-effective financial advice is not accessible to all households. Meanwhile there is a large dispersion in the financial guidance provided to fund members, and on average this guidance is weak.

Financial guidance the most realistic solution

Is it possible to alter the retirement system architecture to generate a system which is far less complex? The changes required would be significant and would need to:

- Remove all interactions between system components (e.g. age pension means testing)
- Generate a level field of tax and incentive effects across system components
- Remove all uncertainties faced by households (e.g. investment risk and mortality outcomes)

Otherwise they would fail to be effective i.e. there would be residual complexities for consumers to deal with. Ultimately the combination of a DC superannuation system and a means-tested pension means that complexity will be a permanent feature of the system.

A realistic solution is to focus on assisting consumers to navigate the system complexity through the provision of improved guidance and advice. We believe that the potential to significantly improve household decision-making is significant. There are many ways that changes could be implemented to improve guidance, such as (the below is not an exhaustive list):

- Through policy, such as making it a requirement for MySuper licensees to provide a RIE
- Through regulatory encouragement. For example, the quality of guidance could be included as part of APRA's outcomes assessment and heatmap reviews
- Through industry competition, with active assessment by superannuation research houses

Conclusion

Most major parts of the retirement system focus on the household. The exception is superannuation, which is based on individual accounts. This impairs effective household decision-making. However, we assess the impact to be modest and the change required to address the problem is significant.

Through this initial lens we identify the complex array of decisions faced by households, particularly in retirement. Given the structural shortages in the advice industry, guidance provided by funds has an important role to play. However, there exists a large dispersion in the quality of guidance provided by super funds; overall the average quality of guidance is weak. We think there are many mechanisms through which to encourage an improvement in financial guidance. This would improve financial decision-making and increase confidence in the retirement system.

Essay 5 – The need for a retirement system objective

Summary

- Without a clear objective for the retirement system, the role of the three pillars and their component parts, is difficult to define and open to interpretation
- This has an important flow down effect for sensitive policy areas, notably superannuation guarantee (SG and voluntary contributions), age pension and treatment of the home (principal residence)
- There exists a strong interaction between retirement system components. We question whether it is appropriate to consider changes in one component without considering accompanying changes in the others

Lack of system objective

The retirement income system does not have a stated objective. This is a recurring observation throughout this submission. In Essay 9 we question whether it is misleading to name the system a 'retirement income system'; perhaps the term 'retirement system' is more appropriate. In Essay 6 we query the role of housing, drawing attention to the fact that the primary role of housing, accommodation is typically not incorporated into retirement system objectives globally. In Essay 1 we detail how retirement preferences, at a policy or individual level, can be converted into a quantifiable objective.

The lack of a retirement system objective leaves us questioning the role of component parts. In particular:

- What is the role of the super?
- What is the role of the age pension?
- What is the role of the principal residence?

We note that there exists a stated purpose of the <u>Age Pension</u>, while the <u>Financial System Inquiry</u> (2014) recommended the creation of a clear objective for superannuation². However, we believe it would be better, and more considered, to create an objective for the retirement system prior to creating objectives for components of the system. Component objectives could then be informed by the overarching system objective.

Roles and interactions

We attempt to summarise the roles of superannuation (both SG and voluntary components), age pension and housing in Table 1. When we look across features of Table 1, we observe that:

² The proposed objective was: *"to provide income in retirement to substitute or supplement the age pension"*.

- The elements of the system, relative to the income tax system, combine a mix of regressive (superannuation, housing) and progressive (through age pension means-testing for middle income earners) taxes and incentives once we extract the implicit tax effects embedded within incentives.
- Assuming sensible rates of return, housing appears to be the most attractive vehicle for savings, driven by leverage and taxation.
- There are no formal policies which appear to tie housing into the retirement income system.

The nature of these roles and interactions are not stationary; they will evolve over time. Take the age pension as an example: the indexation approach means that, over time, it will provide an increased replacement rate in retirement.

Implying the purpose of the retirement income system

Can we imply the objectives of the retirement income system from the aggregate features of its primary components? We found this a difficult exercise. Through the lens of different household types:

- Low income households: the age pension is designed to ensure a reasonable degree of continued consumption in retirement (though one needs to be careful of the 70% replacement rate rule-of-thumb for low income households). However, it is unclear whether, in practice, the role of superannuation is to provide a reserve pool or additional income.
- Middle income households: the SG appears to be designed to ensure a reasonable retirement outcome for those who experience a lifetime of full employment. The age pension means-testing rules represent a high implicit tax on savings in retirement.
- High income households: likely to have sufficient savings to support income in consumption, regardless of superannuation incentives. Have additional access to capital via home equity release.

We would say that the design of the retirement income system does not appear to imply a coherent set of objectives across all Australian households.

Conclusion

The retirement income system is highly complex. There are multiple components with some offsetting characteristics around incentives. Changing one component will affect interactions with other components.

A clear objective for the retirement income system would assist policymakers. It would better inform the objective of system components (e.g. objective of superannuation) which would assist regulators and industry.

	Summary	Tax advantages	Liquidity / access	Other features
Superannuation (SG)	Mandated savings	 Yes - incentives are regressive in nature 	 Bounded by preservation rules Access unlimited in retirement, minimum drawdown rules apply for account structure 	 Contribution limits and balance caps limit access to tax benefits for wealthy
Superannuation (voluntary)	Voluntary	 Incentives vary – equal to or less than SG incentives 	• As per SG	
Age pension	 Provided by government to ensure safety net level of income in retirement Means-tested (income and assets) 	 No taxes, but means- testing rules generate an implicit tax on superannuation savings Implicit tax highest for middle income / wealth cohorts 	 Age pension eligibility age 	 Age pension level indexed (three references), but effectively will grow at or exceed wage growth
Home (principal residence)	 Home ownership represents secure accommodation and the social benefits of the 'home' 	• Significant tax benefits (capital gains tax-free). Incentives are regressive in nature and uncapped.	 Ability to draw down on mortgage Potential for home equity release in retirement 	 Access to leverage at low rates Principal residence only partly included in the age pension means test

Table 1: Overview of features of components of retirement income system.

Essay 6 – The incoherent role of housing in the retirement income system

Summary

- Housing is recognised by the Retirement Income Review as a component of the third pillar of the retirement income system
- Yet housing performs an incoherent role in retirement. The role performed by housing differs across cohorts of the population
- We also believe it important to consider the scenario of ongoing challenged housing affordability

Introduction

Housing is recognised by the Retirement Income Review as a component of the third pillar of the retirement income system (illustrated in Figure 1).

Pillar 1 Government funded Age Pension	Pillar 2 Compulsory	Pillar 3 Voluntary savings		
Safety net level of income including longevity risk protection Means tested	Superannuation Guarantee Supported by tax concessions	Voluntary superannuation contributions Made by individuals Supported by tax concessions	Other Home, investment property, financial and non-financial assets	

<u>Figure 1</u>: Components of Australia's retirement income system (reproduced from Retirement Income Review Consultation Paper).

However, the role of housing in the retirement income system is undefined and unclear; ultimately, it performs an incoherent role. This is the theme of this essay.

Further we note the potential for a prolonged period of reduced housing affordability. While the role of housing in retirement is incoherent, we believe reduced housing affordability will impact all of the principles which the Review are focused on: adequacy, equity, sustainability, and cohesion. We detail the issue; it may be one which the Review chooses to explore further.

The incoherent role of housing in retirement

There is no objective for the retirement income system (the topic of Essay 5). The role of housing in retirement is not formalised and generally unclear.

We consider the role of housing through the 'traditional' lens of the lifecycle, summarised in Table 1. Through this traditional lens we make the following observations:

- Home ownership provides secure accommodation (rental is not secure) and provides social benefits of 'home' versus 'house'.
- The tax advantages of home ownership can be significant and accrue to those with higher income (greater benefit of tax-free gains) and greater wealth (generally a larger principal residence).
- It is implicitly means-tested in a crude manner by the age pension. This fails to account for geographic location.
- It appears to be an informal bequest strategy. Research by CEPAR (<u>CEPAR (2019)</u>) suggests that property made up 70% of assets of those dying aged 65-84.
- There is no requirement to draw down on home equity in retirement unlike other forms of tax-advantaged savings.

If housing is formally acknowledged as part of an objective of the retirement income system, then the lifetime government support diagram (Figure 2, reproduced from the Retirement Income Review Consultation Paper), would need to be updated, as alluded to in the Consultation Paper. This clearly impacts the Review's principles, particularly around equity, sustainability and cohesion.



Figure 2: Lifetime government support provided through the retirement income system (reproduced from Retirement Income Review Consultation Paper).

The scenario of ongoing challenged housing affordability

We now consider the scenario of persistent challenged housing affordability. The challenge is nuanced as house price increases have been accompanied by interest rate falls. <u>CEPAR (2019)</u>

research shows that over the last two decades for some households the time to save for a hypothetical deposit has increased from 4 years to 6 years, but repayments are lower (36% of income, down from 44%).

Anecdotally it appears that saving for a deposit is the primary barrier to home ownership. This has raised concerns regarding family-sponsored home deposits and the inequalities this generates. This impacts the Review through its focus on the principles of equity and cohesion.

This may be a scenario that the Review chooses to explore in further detail.

Conclusion

Creating a clear objective for the retirement income system would assist policymakers assess the role of housing in retirement. Without a clear objective, the role of housing in retirement appears incoherent.

The potential for an elongated period of challenged house price affordability is a scenario the Review may wish to explore further.

	Lifestage			
	Early career	Mature working life	Retired	
Activity	RentingSaving for deposit	 First home Home improvements Upsizing 	 Stable home Conversion to age- friendly Downsizing considerations Age care considerations 	
Accommodation source	 Rental accommodation (insecure) 	Own home	 Own home Age care	
Financial considerations	Saving for deposit	 Paying off / drawing down on mortgage debt Home ownership provides access to a substantial amount of low-cost leverage 	 Reduced age pension payment for home owners (where eligible) Likely debt-free Access to home equity release No obligation or policy to Informal bequest strategy 	
Tax, incentives	 Rent is after-tax Returns on savings are taxed Some incentives to assist with deposit 	 Capital gains are tax-free Paying down debt effectively earns mortgage rate after-tax 	 Capital gains are tax-free 	

 Table 1
 Traditional lifecycle housing-related activity.

Essay 7 – Does the term 'retirement income' mislead?

The Conexus Institute would like to acknowledge Annabelle Tian and thank her for coauthoring this essay. Annabelle has tutored superannuation-related subjects at UNSW, and will soon begin her career at IAG.

Summary

- The term 'retirement income' may potentially mislead or mis-frame people to think of their retirement savings primarily as an income generator, rather than a savings pool which they draw down on to fund consumption in retirement.
- It appears that individuals draw down at rates which do not maximise retirement outcomes (relative to 'deterministically optimal' levels).
- This could be rational behaviour (reserving to manage the risks faced by individuals) or behavioural (e.g. similar to implied endorsement through minimum drawdown rules).
- This leads us to conclude that 'retirement income' is not the most accurate name for the system, and perhaps it should be tested to see whether this creates framing issues for consumers and industry participants.

The framework of consumption, savings and investment

Retirement systems globally reflect unique applied versions of the lifecycle model of consumption, savings and investment. Explored and extended by academics for many decades, the framework distinguishes between three stages of the lifecycle: childhood, working life and retirement. Of these three stages, the latter two are when individuals are economically productive and have the financial means to exercise decisions (consumption, savings and investment) that will directly affect their living standards (see for instance <u>Milevsky (2006)</u> and <u>Milevsky (2012)</u>)³. One important aspect of the framework is saving during working years to fund consumption in retired years: retirement smoothing.

We utilise deterministic modelling to illustrate the framework. We note the shortcomings of deterministic modelling (a deterministic model only considers expected outcomes and not the range of outcomes); indeed, the existence of a range of outcomes is a rational explanation for some of the practices we observe. Stochastic modelling is explored in detail in Essay 2.

We model an individual who earns constant income through their working life, saves and then draws down on these savings in retirement, which starts at age 67. We assume the individual lives for exactly 25 years in retirement.

³ <u>Milevsky (2006)</u> takes a future value and present value approach to modelling the value of savings and consumptions over the lifecycle. Furthermore as explained by <u>Milevsky (2012)</u>, during childhood the individual is developing their human capital which then translates to wage income in working life.



Figure 1: Basic lifecycle model. An individual earns constant income (AWOTE) throughout their unbroken working life. They constantly save (in this case 9.5% of their wage) and then draw down on these savings in retirement (which begins at 67). The individual is modelled to live for exactly 25 years in retirement. Inflation is assumed to be a constant 2.5%.

We can see that Figure 1 leaves out many important facets. We extend the model (Figure 1) to account for wage growth, investment returns and the age pension. Further extensions would include taxes, though that is not necessary for this essay.

We observe that the level of available consumption in retirement is much higher than in Figure 1. In comparison to Figure 1, in Figure 2 the savings balance profile takes on a familiar 'shark fin' shape. This is due to the compounding effect of investment returns and wage growth (in accumulation).



Figure 2: Extended lifecycle model incorporating all the assumptions in Figure 1 and also wage growth, investment returns (1% real and 3% real, respectively), and the age pension (means-tested for a single homeowner).

Analysing sources of 'retirement income'

In the previous section we outlined the lifecycle theory of consumption, savings and investment. We make three observations:

- 1. In the absence of social security programs, consumption in retirement is funded by savings (which grows through working life as a combination of contributions and investment returns).
- 2. Retirement consumption from savings could be thought of as having two components: income on the savings pool and a drawdown on saved capital.
- 3. The age pension is an additional source of income in retirement.

In this section we seek to explore the contribution of each component to consumption in retirement.

It appears that some consumers and industry participants frame retirement spending as the income sourced from their savings pool and age pension, but do not account for spending down their savings. This framing manifests itself in media articles on topics such as age pension rule changes (see <u>'retirement trap'</u> or <u>'pension changes'</u>) and the Labor party's proposed franking credit policy (for example, <u>'17% worse off'</u>). One article which does describe the situation better is <u>'\$1 million is never less than \$500k'</u>.

Components of consumption in retirement

AWOTE	Drawdown	Balance at	Retirement	Sourced from (average)			Bequest
multiple	approach	retirement	consumption	Investment	Age pension	Capital drawdown	
			(average)	income			
0.54	'Optimal'	489,386	47,520	7,465 (15.7%)	20,479 (43.1%)	19,575 (41.2%)	0
0.5X	Minimum drawdown	489,386	39,943	10,602 (26.5%)	16,567 (41.5%)	12,775 (32.0%)	170,001
1x	'Optimal'	978,771	67,753	14,969 (23.1%)	10,633 (16.4%)	39,151 (60.5%)	0
	Minimum drawdown	978,771	49,162	21,203 (43.1%)	2,408 (4.9%)	25,551 (52.0%)	340,002
2x	'Optimal'	1,957,542	115,458	32,952 (28.5%)	4,203 (3.6%)	78,302 (67.8%)	0
	Minimum drawdown	1,957,542	93,508	42,406 (45.4%)	0 (0%)	51,102 (54.6%)	680,004

In Table 1 we attribute sources of retirement consumption in a deterministic modelling environment.

<u>**Table 1**</u>: Deterministic retirement consumption forecasts under two different approaches: 'optimal' drawdown (a constant stream of retirement consumption which exhausts capital at the point of death – all determined in a deterministic framework) and following the minimum drawdown rules. All assumptions from Figure 1 and Figure 2 are applied. We do not incorporate the \$1.6m account level cap nor taxes. In the table average retirement income is broken into its component sources (again, on average), by dollar and percentage.

We can see from Table 1 that, for all levels of income, failing to 'optimally' factor in capital drawdowns has a large impact on the retirement experience. The size of the effect ranges from 16% (low wage earners) to 27% (median wage earners). The attribution shows that the outcomes are driven by retaining capital, which creates a bequest, but reduces consumption and age pension receipts.

For all but the lowest wage earners, drawing down capital represents the largest source of retirement consumption. This motivates the reflection around naming the system 'retirement income' if the biggest pool of resources available to individuals comes from drawing down their accumulated savings.

Motivating behaviours

There is strong evidence of low drawdown rates of capital in practice which do not conform to the basic lifecycle model⁴. There are rational and behavioural explanations which may explain this observation.

First, in any stochastic framework (a more advanced model which accounts for variability in factors such as investment returns and mortality outcomes), it would be sub-optimal to plan to spend down savings using the approach we have described as 'optimal' in our case study. In any utility-based framework where people are risk averse, the possible experience of unfavourable outcomes (where either or both of investment and mortality outcomes have been unfavourable) would more than exceed the experience of favourable outcomes. This was explored in Essay 2, demonstrating that to be sure of achieving a certain level of retirement consumption, an individual would need to choose a reduced level. The concept of utility is explained in Essay 1.

There are also a range of possible explanations including bequest motives and precautionary savings motives. Dynan et al (2002) argue that these motives overlap. De Nardi et al (2010) identify heterogenous medical costs as a precautionary savings motive.

From a behavioural perspective, <u>Bateman et al (2017)</u> suggest the low drawdown rates of capital in retirement may be attributed to implied endorsement. In the experimental study both government advice and peer effects were key drivers of spending behaviour, with 30% of Australian participants matching their consumption with the policy-based minimum withdrawal rates (MWRs). This suggests that the MWRs are viewed as endorsed by government and interpreted as advice.

Is 'retirement income' a misleading name?

There is a strong case that 'retirement income system' is a misleading name for the system. Provision of consumption in retirement comes from income on savings, drawing down savings and social security. Media articles suggest that this is not always well understood, with a focus on the two sources of income.

In our model retirement consumption is funded by income on assets, the age pension, and drawing down on saved capital. In practice there are other candidate funding sources such as other financial assets and housing⁵. Either way, in much of the adequacy analysis a sizable part of retirement consumption is funded by drawing down on accumulated savings.

There is a strong case to draw down cautiously (relative to the deterministically optimal level) and account for possible environments which aren't captured in a deterministic environment (explored in Essay 2). Exhibiting motives for precautionary savings (for unexpected costs) or a bequest motive may also be appropriate behaviours for a household.

⁴ See for instance <u>Balnozan et al (2018)</u> study on drawdown behaviours, of the pensioners surveyed 48% followed the minimum drawdown rates and 28% followed a level dollar amount drawdown.

⁵ As an example, <u>Grattan (2018)</u> assumes a full drawdown of superannuation assets and other financial assets but does not assume the use of home equity release products.

These rational reasons for drawing down less than the deterministically optimal level make it difficult to attribute if any of the behaviour can be attributed to behavioural effects such as implied advice of a mis-named system.

Ultimately a significant part of retirement consumption is spending down capital saved for retirement (from a savings pool which generally benefitted from tax incentives). The name 'retirement income system' does not align well with this concept. Though untested (to our knowledge), perhaps it creates some framing issues for consumers, media and industry participants.

Essay 8 – 'Lottery effects' in the superannuation system

Summary

- The Productivity Commission identified implementation performance as a 'lottery effect' which could result in significant differences in outcomes between like individuals
- Unfortunately, implementation performance is not the only 'lottery effect' in the system we identify and explore four additional effects

PC identify a 'lottery effect' – implementation / fees

The <u>Productivity Commission (2019)</u> identified default fund placement as a 'lottery effect' which could result in significant differences in outcomes between like individuals. The lottery effect terminology looks beyond the natural variation in outcomes between super funds, to situations where the expected outcomes across funds differ and are likely to persist. The consumer's lottery outcome is the difference in expected outcome based on the fund they are defaulted into. The specific lottery effect identified by the PC, related to the identification of large, persistent dispersion between the implementation performance of super funds on a net-of-fees basis.

However, we believe dispersion in implementation performance is not the only lottery effect in the system. We outline and detail a range of other impacts which may have a similar size of impact.

We consider the ramifications of a system with multiple lottery effects.

A suite of lottery effects

In this section we briefly detail four other lottery effects that we believe could possibly have a similar impact as implementation performance. It is not possible to assess and rank the impact of each lottery effect without a clear objective, which accounts for the distribution of outcomes (i.e. a utility function, explored in Essay 1). Nonetheless, this would be an interesting area that the Review may want to further explore.

I - Level of investment risk

Super funds differ significantly in the level of investment risk targeted in their default options, as identified by <u>APRA's Heatmap (2019)</u> (see Figure 1 below which reproduces the relevant APRA chart). The BP (benchmark portfolio) analysis technique used by the Productivity Commission, while a creditable approach for assessing implementation performance, ignores the impact of the overall investment risk decision (this is a direct feature of the BP approach).



Figure 1: 5-year MySuper net investment return peer comparison by average growth allocation p.a. (as at 30 June 2019): source <u>APRA's Heatmap (2019)</u>.

The level of risk has two impacts on outcomes:

- 1. In an environment where there is expectation of a positive risk premia, then higher risk funds would be expected to outperform
- 2. The year-on-year variability in outcomes increases with greater investment risk. This generates a wider distribution of possible retirement outcomes

So, the investment risk decision is multi-faceted: higher outcomes are valued by consumers but a wider distribution of outcomes is viewed unfavourably by risk averse consumers. How do we assess this trade-off? Academic researchers would use a utility function. Once a design and parameters for a utility function are determined then a 'policy level' of investment risk could be determined, and also an assessment of opportunity cost of alternative levels. The case for utility functions is made in Essay 1. Overall, given the large variation in default fund risk targets, we expect a sizable 'lottery effect' to exist.

II - Default option design

Here we mean the way that the level of investment risk is targeted over the lifecycle. There are two broad styles of default fund design: balanced (or constant risk) funds, and lifecycle funds. Within each category there is large variation in design and risk levels (risk level is discussed above).

If a consumer only makes a single contribution at the start of their working career and the objective of superannuation was a lump sum balance rather than income in retirement, then the optimal investment strategy is a constant risk exposure through life (a well-known academic result, see <u>Barberis (2000)</u> for instance). However, the Superannuation Guarantee ensures multiple contributions throughout the lives of working Australians and so we have a more complex problem.

To add some perspective to this problem, consider the case of an individual who works without a break through their career: the super fund performance in the final year of work will likely have 50 times greater impact on their retirement outcome than the performance in the first year. This may generate two reflections:

- 1. Perhaps a young member may be able to target much higher risk
- 2. An older member may be wary of taking a large amount of investment risk just prior to retirement

These reflections motivate the case for lifecycle strategies, whereby the broad aim is to maintain a constant unit investment risk across time i.e. to spread the units (i.e. dollars) of investment risk as evenly as possible across each time period.

In practice there are many additional elements which further complicate analysis including uncertain work patterns, post-retirement, and the role of the age pension.

Appendix 1 contains a case study illustrating how a "well-designed" lifecycle strategy with poor investment implementation performance could provide greater expected utility than a well-managed balanced fund approach. This is a truncated version of David Bell's SPS 515 submission to APRA (<u>Bell – SPS515 (2019)</u>).

In summary, the 'lottery effect' is that some funds may have superior fund designs, and the expected benefits of superior fund design are persevering.

III - Post-retirement solutions

Super funds in general do not provide advanced default post-retirement solutions which provide longevity protection or advanced dynamic strategies to re-optimise the consumption and investment decisions over time. Standalone product solutions are available but these are generally distributed through advice models. As discussed in Essay 10, financial planners are not always trained or equipped with the tools to make such complex decisions.

The lack of default retirement solutions which contain longevity protection was addressed in the Financial System Inquiry (FSI (2014)) which recommended the creation of CIPRs. A proposed policy framework for CIPRs was developed by Treasury (CIPR (2016)).

While we are not confident that a CIPR itself will add value to the broader population (see for instance <u>Mine (2017)</u>, we have greater confidence that a well-designed default retirement solution could deliver welfare benefits (<u>Liu and Bell (2018)</u>).

The lottery effect is a potentially large dispersion in the future quality of retirement solutions, consumers take product provision and defaults as guidance, and like consumers in different funds experience a large difference in retirement outcomes.

Guidance provided by super funds (in absence of financial advice)

The issue of inadequate quantity and quality of financial advice and guidance available to fund members is explored in Essay 10. Beyond the system-level shortcomings, there is also the likelihood of a large difference in the quantity and quality of guidance provided and made available to members by their super funds.

According to super industry researcher <u>SuperRatings</u>, only 42% of super funds now provide retirement projections in their member statements. <u>Rice Warner</u> observe that one third of super funds don't have a superannuation projection calculator on their public website. Rice Warner identify many calculators as being very simple – only accommodating an individual (rather than couples), ignoring the age pension, or being deterministic without showing the range of outcomes of a stochastic model.

If consumers weigh their decisions and take guidance as well-considered, then there is potentially a large opportunity cost from taking an incorrect course of action. The lottery effect is the potentially large dispersion in the quality of guidance provided amongst super funds.

We haven't estimated the potential cost but, at request, could construct a few case studies to illustrate.

Implications of multiple lottery effects

Multiple lottery effects exist in the superannuation system. We identify four (level of investment risk, default option design, post-retirement solutions, and member guidance) in addition to the one (implementation performance) identified by the Productivity Commission.

It is appropriate to attempt to remove lottery effects. This would support some of the principles of the Review, notable adequacy, equity and cohesion. However, the existence of multiple lottery effects makes policy more difficult to formulate. For instance, a policy to address one lottery effect may leave others unaddressed.

To remove lottery effects most likely requires a suite of policies, regulations and nudges.

Appendix 1 – Assessment of fund design

Introduction to a Basic Lifecycle Outcomes Model

For the purposes of this discussion paper, modelling on a "to" basis is sufficient to provide case studies on key issues. We consider the case of an individual who experiences an uninterrupted working career, always earning AWOTE⁶.



An example of the output used to address some case studies is included in Figure A1.

Figure A1: Summary analysis from basic lifecycle model (accumulation balance at retirement).

The table contains some self-explanatory summary statistics, while the chart provides a distribution chart of outcomes.

To compare the distributions of alternative product strategies, we form a basic quantifiable objective. For this case study we focus on accumulation balance and not income in retirement. Other features:

- Assumes constant relative risk aversion (known as CRRA), specifically people take risk in proportion to their assets, and not a dollar amount of risk. This is an assumption the whole default industry is based on.
- The formula appears as follows:

$$U(W_T) = \frac{W_T^{1-A_R}}{1-A_R}$$

Where:

• W_T is accumulation balance (wealth) at the time of retirement (T)

⁶ The model used is quite basic and has the following characteristics:

- An individual is assumed to earn an amount similar to AWOTE for their entire career
- Earnings growth slightly exceeds inflation (1% real)
- 9.5% Superannuation Guarantee
- Taxes ignored (but should be included)
- Investment returns defined on a case-by-case basis
- Investment returns are assumed to be normally distributed
- 1,000 simulations to generate the range of possible outcomes

- A_R is the coefficient of relative risk aversion
- I assume A_R is 5, consistent with values seen in the academic literature

Case Study 1: It is not just about net returns...

One of the themes in the industry, and indeed the submissions, is that it is all about net returns. The key word missing here is 'risk' which impacts the distribution of possible outcomes. Funds spend member's savings to implement an investment strategy and they take investment risk on their behalf. There exists a reasonable dispersion amongst the risk levels targeted by different MySuper offerings.

This case study illustrates that it is not just about net returns. I manufacture a specific case:

- Fund 1: 10% volatility, targeting net returns of CPI + 4.5%
- Fund 2: 7% volatility, targeting net returns of CPI + 4%

The summary results for each are presented below:



Figure A2: Summary analysis from basic lifecycle model (accumulation balance at retirement), Fund 1 assuming 10% volatility, targeting net returns of CPI + 4.5%.



Figure A3: Summary analysis from basic lifecycle model (accumulation balance at retirement), Fund 2 assuming 7% volatility, targeting net returns of CPI + 4%.

Comparing Figure 2 against Figure 3 reveals some interesting observations:

- Fund 1 has a higher expected balance at retirement (\$972,302) compared with Fund 2 (\$871,492).
- This appears driven by a long tail of very high outcomes. The maximum simulated outcome for Fund 1 was \$4,804,655, compared with \$2,124,220 for Fund 2.
- However, Fund 2 delivers a narrower range of outcomes, as evident from the diagrams, and statistically by the lower standard deviation (\$253,690 for Fund 2 versus \$436,615 Fund 1).
- The worst-case outcome for Fund 2 (\$293,723) is also higher than for Fund 1 (\$248,377).

How does a policymaker, regulator or trustee choose between such strategies, as they are obliged to? How do policymakers, reviewers and regulators compare two strategies (which could readily represent MySuper defaults)?

A basic utility function considers all possible outcomes and considers. In this case Fund 2 is considered to provide a better balance of outcomes for members (the worse cases in Fund 1 are penalised more heavily than the very high outcomes).

This example demonstrates that it is not all about net returns. Where trustees have the responsibility to determine an appropriate risk target, it is all about acknowledging the range of possible returns associated with a strategy. Only once a risk target is determined (whether legislated (e.g. all MySuper defaults must target 7% standard deviation) or determined by trustees), can the focus switch solely to net returns.

From this example observe that:

- This represents a case study where, arguably, Fund 2, delivering lower net returns, is a better strategy
- Without accounting for risk, there exists the potential for strategies targeting high risk, underperforming in terms of converting risk into returns, may still delivering high net returns, to be viewed favourably by a net-return focused industry.

Case Study 2: Comparing lifecycle against balanced strategies

There remains an ongoing debate in the industry around whether lifecycle strategies or balanced strategies represent more appropriate default strategies. We believe a lifecycle outcomes model complemented with an outcomes-based objective helps provide clarity and objectivity. I now provide an illustration comparing a lifecycle and a balanced default strategy.

Lifecycle Strategy:

- First 20 years: 10% volatility, targeting net returns of CPI + 5%
- Next 10 years: 8% volatility, targeting net returns of CPI + 4%
- Final 10 years: 6% volatility, targeting net returns of CPI + 3%

Balanced Strategy: 8% volatility, targeting net returns of CPI + 4%

The summary results for each are presented below:







Figure A5: Summary analysis from basic lifecycle model (accumulation balance at retirement), Balanced Strategy.

The analysis seems to suggest these two strategies are expected to produce a similar range of outcomes for their respective members. The Lifecycle strategy delivers a narrower range of outcomes and the worst-case outcomes are improved, but the Balanced strategy has a higher average outcome. Weighting the range of outcomes using our utility function, the utility scores are nearly identical!

From here we could enhance our Lifecycle strategy, by targeting higher investment risk across all stages while maintaining a better spread of unit risk exposure through life. This would enhance returns and would be expected to outperform the Balanced strategy.

Essay 9 – Market failure in retirement solutions?

Summary

- Is there market failure in the provision of retirement solutions?
- What are the reasons that super funds are not providing advanced retirement solutions which effectively incorporate longevity protection?
- Do trustees need to be defaulted themselves via provision of a nationwide default solution?

Introduction

A story to provide background to this essay. Last year I attended a conference on retirement risk management. One of the attractions of attending was to see a leading super fund CEO (who I regard highly) present on their developments in the area of retirement solutions. The CEO outlined what could be created, and the capabilities they have internally to develop such solutions. It was exciting to hear of the potential better outcomes for member. The CEO then reflected on the unclear regulatory environment, and observed that the commercial benefits of being first to market are difficult to estimate, especially in a profit-for-member environment. Overall, the CEO suggested that a 'fast follower' approach represented a better risk-adjusted strategic approach than taking innovation risk to be a 'market leader'.

Beyond relatively simple 'bucket' strategies (e.g. <u>Australian Catholic Super</u>) there has been little development of retirement solutions by superannuation funds, particularly solutions which manage longevity risk. One notable example is <u>Mercer Lifetime Plus</u>, which represents a form of group self-annuitisation (GSA) and used as part of Mercer's superannuation fund. Notable third party solutions include Challenger (<u>lifetime annuities</u> and <u>deferred lifetime annuities</u>) and Allianz Retire+ (<u>cap and floor market participatory note</u>).

This essay explores whether there is market failure in terms of retirement solutions. To do this we first need to define market failure.

Defining the 'market' and 'market failure'

For the purpose of this essay we consider the 'market' to be quality financial solutions which are cognisant of the key sources of variability. In this case we consider two solutions:

- 1. A single product solution which accounts for retirement risks (e.g. a GSA or an annuity)
- 2. A plan-based solution which incorporates financial guidance and possibly a collection of underlying products

A definition of market failure, as described in Wikipedia:

"In economics, market failure is a situation in which the allocation of goods and services by a free market is not efficient, often leading to a net social welfare loss. Market failures can be viewed as scenarios where individuals' pursuit of pure self-interest leads to results that are not efficient—that can be improved upon from the societal point of view."



Through this lens the market for retirement solutions could be described by Figure 1.

Figure 1: Overview of the Australian market for retirement solutions.

Some interesting features are detailed in Figure 1. The most notable feature is the potential role of intermediaries in household decision-making. While some households may make an active decision to select (or not select) a specific retirement solution, often households will adopt default solutions provided by super funds or seek professional advice.

Impact of age pension

The age pension represents a longevity solution which is free to individuals on a means tested basis. It provides conditional protection for all Australians. The full age pension provides a level of income designed to avoid poverty. It is provided for life and the payment is indexed (effectively by wage growth).

The <u>Grattan Institute (2018)</u> project that nearly 40% of present retirees will receive more than half of their retirement income from the age pension, and that nearly all households will receive some form of age pension payment during their retired lives.

So efficiently integrating the age pension with an ABP will provide effective solutions for retirees. For instance, <u>Mine Super (2017)</u> identified that a solution of this nature may provide a superior outcomes to a CIPR.

The existence of the age pension distorts the market for retirement solutions. A large portion of the population may already have all the longevity protection they require, though it is unlikely that it is being integrated into an effective retirement solution package. Additional components would be a personalised consumption and investment plan which is updated regularly.

In Figure 2 we have updated our framework to incorporate some of these reflections.



Figure 2: More detailed overview of the Australian market for retirement solutions.

Figure 2 differs from Figure 1 in two important ways:

- 1. It acknowledges the age pension as a product
- 2. It splits retirement solutions into a combination of ongoing guidance and products

We now look deeper through the lenses of product and guidance.

Product lens

Presently the marketplace for non-government retirement product solutions appears small. Reasons for this include:

- Government age pension has dominant 'market share'
- Modest size of adviser channel
- No access to default market (super funds are not creating integrated default solutions)

The outlook for new entrants appears unattractive, due to:

- Modest market size impacts ability to diversify liability book
- Large establishment costs: education of planning channels and marketing

Guidance lens

Here we break our assessment into the three categories of defaults, financial advice and personal choice.

- Defaults there are few funds who provide retirement defaults which integrate longevity products (whether the age pension and/or external product). Possible reasons include:
 - \circ 'Rational' argument, detailed at the start of this essay, where the operational risk-reward payoff is greatest for the fast follower approach
 - o Uncertain regulatory environment around retirement solutions
 - Operational capital limitations combined with a regulatory / industry focus on fees. This links in with the concept of operational peer group risk

- Capability gap historically super fund business models have focused on account administration of relatively simple products, investment and insurance. The design of complex retirement solutions may require new skills at the trustee and executive level
- Financial advice should naturally have strong capability in the development of plans which incorporate solutions. And a number of advice groups do use the product solutions detailed in Figure 2. However:
 - Not all advice clients want risk management. Higher net wealth clients may be more focused on wealth creation, and possibly view longevity risk as something which will only impact the size of the bequest
 - The tools used by advisers may struggle to display the true benefits of longevity product solutions. For instance, many advice tools are based on deterministic (returns are assumed certain and age of death is assumed to be known) rather than stochastic analysis
 - The concepts of stochastic assessment and risk management are complex and not all advisers may be confident in their understanding and ability to explain to their clients
- Personal choice this market is likely small and people face a complex set of problems, the same as those which some financial planners find difficult to address. Additionally:
 - Many individuals have low levels of financial literacy (see <u>Agnew et al (2013)</u>), though we are less clear around whether the people who make personal choices have higher financial literacy
 - Additionally, they are not well served in terms of guidance tools. The guidance tools provided by super funds generally have limited capabilities (see Essay 10 for further discussion)

Overall, our assessment is that the range of solutions available appears adequate, especially if you include the age pension. Guidance is the biggest issue, in essence the market failure, particularly with respect to default design.

Causes of market failure

An assessment of traditional causes of market failure:

- Positive externalities⁷: advanced retirement solutions are likely to reduce the demands on the age pension, and increase the confidence of retirees to consume.
- Negative externalities: the development of products by individual super funds will incur development costs which would need to be shared across the fund (for profit-for-member funds) or be recovered other ways (for-profit funds).

⁷ An externality is an effect on a third party that is caused by the consumption or production of a good or service.

- Lack of public goods⁸: there is no direct public goods problem. But there is a problem which motivates similar free rider challenges: the high development costs and risks associated with developing a complex retirement solution. The uncertain regulatory environment adds further risk. Public goods issues may arise through the inability to protect intellectual property rights. This aligns with the "fast follower" industry case study described previously.
- Underproduction of merit goods⁹: quality retirement solutions could be considered a merit good with societal benefits.
- Overprovision of demerit goods¹⁰: further choice options when we have 40,000 could be considered overprovision of demerit goods. The case for integrated retirement solutions being a de-merit good is tied to 'choice overload' when applied to consumers with low financial literacy. However, if the main channel for intermediation of retirement solutions is through defaults then choice overload is less of an issue.
- Abuse of monopoly power: no clear case for abuse of monopoly power, as the market structure of superannuation is not strictly a monopoly.

In summary the causes of the market failure could be viewed as: a failure to recognise positive externalities and an agent-based ownership of negative externalities (a free-rider position created via a "fast follower" approach).

Solutions to the guidance challenge

Two solutions have been explored by Treasury:

- Comprehensive Product for Retirement (<u>CIPR (2016)</u>): this considered the mandatory development by super funds of a default-style opt-in retirement solution. We assess the proposal would have only little benefit in practice due to the prescriptive nature of the design requirements and the opt-in nature of the product (see <u>Bell (2017)</u> for further critique). If it allowed the age pension to be recognised as the longevity solution outcomes would be improved.
- 2. The Retirement Income Covenant (<u>RIC (2018)</u>): details the proposed introduction of a retirement income covenant in the Superannuation Industry (Supervision) Act 1993 which would require trustees to develop a retirement income strategy for their members.

A more extreme solution would be a national default retirement scheme. The issue with an idea of this nature (for example <u>Bell (2017)</u>) is that it would not interact well with the existing age pension, meaning that some people would likely be over-insured for longevity risk.

⁸ Public goods are goods where the total cost of production does not increase with the number of consumers. As an example of a public good, a lighthouse has a fixed cost of production that is the same, whether one ship or one hundred ships use its light. Public goods can be underproduced; there is little incentive, from a private standpoint, to provide a lighthouse because one can wait for someone else to provide it, and then use its light without incurring a cost.

⁹ A merit good is a private good that society believes is under consumed, often with positive externalities. For example, education, healthcare, and sports centres are considered merit goods.

¹⁰ A demerit good is a private good that society believes is over consumed, often with negative externalities.

A fund-led solution would permit greater tailoring to individual member requirements but also potentially generate a large dispersion in the quality of solutions across super funds, hence a 'lottery effect' (explored in further detail in Essay 8). This could be partly mitigated by minimum standards prescribed through policy, a clear objective, and ongoing assessment by APRA and research ratings groups.

Finally, greater provision of retirement guidance tools may have some impact, but likely limited. Many people choose not to engage and have low financial literacy, so even a well-designed educative tool may have only limited take-up.

Conclusion

There is a strong case that market failure exists in retirement solutions. Retirees are not being provided the best solutions. This isn't necessarily a component product failure since the age pension provides a significant foundation. Rather guidance, specifically in the area of defaults which aggregate longevity solutions, account-based pensions, and provide periodic updates on the appropriate consumption and investment strategy. In aggregate the superannuation industry is failing to acknowledge the positive externalities that arise from well-designed retirement default solutions. The 'rational' view seems to be to adopt a 'fast follower' approach. If all funds adopt this same line of thinking we end up with market failure.

We view the proposed Retirement Income Covenant as having greater potential impact than the proposed CIPR framework. We think there are a range of other industry pressures relating to regulatory oversight and research ratings assessment which could also have a positive impact.

Essay 10 – The critical shortage of quality financial advice and guidance

Summary

- The policy and regulatory environment facilitates provision of a spectrum of advice which caters for cost / complexity
- But many consumers appear to not receive important guidance in areas such as consumption in retirement
- Collectively the superannuation industry is failing to provide quality retirement income estimates and access to quality retirement calculators
- In the present industry state many consumers will never receive an accurate estimate of what is an appropriate spending level in retirement. This affects their retirement outcomes and confidence in the retirement system
- Advice does not appear to be a realistic solution. Super funds could perform a more important role, otherwise greater government support may be required.

Overview of the financial planning / guidance regulatory environment

Formally, two types of financial advice can be provided in Australia, captured in Figure 1:

1. General advice

Does not account for an individual's circumstances, such as objectives, financial situation and needs. A common example of general advice is information about a product that may be suitable for an individual, however the adviser does not consider overall financial goals or recommend an individual to take up the product.

2a. Personal advice: simple, single-issue

Commonly called scaled advice – focuses on a specific financial issue, for example, the best way to make personal super contributions. It may not account for all personal information (further information on scaled advice).

2b. Personal advice: simple, single-issue

Involves developing a comprehensive financial plan to help the client set and achieve financial goals. It will cover things like saving, investments, insurance and superannuation and retirement planning. It accounts for all personal information.

Figure 1: Overview of financial advice regulatory framework.

We note that the <u>Productivity Commission</u> recommended that general advice be re-named to not include the misleading word "advice" (the <u>Hayne Royal Commission</u> had similar views).

Additionally, various pieces of guidance are often available to consumers regarding their projected consumption in retirement. These include:

- 1. Retirement projections:
 - a. A projection of retirement balance at retirement
 - b. A retirement income estimate

Both can be provided on a super fund member's annual statement or in the form of calculators. This information can be provided based on <u>Class Order [CO 11/1227]</u> Relief for providers of retirement.

 Various forms of calculators which allow for user input around assumptions. Exemption from licensing requirements and conditions by <u>ASIC Corporations (Generic</u> <u>Calculators) Instrument 2016/207</u>.

<u>ASIC's research</u> suggests the terms "general" and "personal" advice are industry jargon and not well understood by consumers.

In the absence of financial advice or guidance, consumers with low financial literacy tend to take implicit guidance from account-based pension minimum drawdown rules (<u>Alonso-Garcia et al</u> (2018)) and default options (<u>Bateman et al (2017</u>)).

Provision of advice and guidance in practice

The number of advisers has fallen and is projected to fall in the short to medium term (forecasts by Adviser Ratings suggest from 21,500 in 2018 to 15,000 in 2024), due to increased education standards, repeal of grandfathered commissions (based on recommendations of Hayne Royal Commission), and challenges to vertically integrated business models. According to ASIC only 27% of Australians have received personal financial advice, 12% in the last 12 months, while only 1% had used digital advice (84% of survey participants hadn't heard of digital advice). The main barrier to greater advice take-up appears to be cost: 35% of those surveyed considered advice to be too expensive, while 29% considered their own financial circumstances too limited for it to be worth getting financial advice. Overall the survey suggested mixed confidence in financial advisers (11% a great deal, 39% a moderate amount). Retirement income planning was the second most prominent area of advice, behind advice on investments.

According to super industry researcher <u>SuperRatings</u>, 42% of super funds now provide retirement projections in their member statements, up from only 34% in 2017.

<u>Rice Warner</u> observe that a third of super funds don't have a superannuation projection calculator on their public website. Of the funds that do, about one fifth of those redirect the member to ASIC's MoneySmart calculator instead, losing the opportunity to engage their members. Rice Warner identify many calculators as being very simple – only accommodating an individual (rather than couples), ignoring the age pension, or being deterministic without showing the range of outcomes of a stochastic model.

Limitations of retirement income estimates

Though they have some engagement value (as <u>identified by CEPAR</u>), standard retirement income estimates could be quite misleading due to modelling techniques and assumptions.

First, the models are deterministic; they provide a point estimate and do not explain to consumers the range of possible outcomes. This can frame expectations and motivate decision-making without awareness of the risk involved (e.g. if we assume, for simplicity, a normal distribution of outcomes, then drawing down at recommended rates would statistically result in a high chance (approximately 50%) of outliving retirement savings).

Second, there are many substantial assumptions incorporated into the forecasts, including:

- 1. Investment returns fixed at 3% regardless of provider or investment option
- 2. Inflation rate fixed at 2.5%
- 3. Retirement age 67
- 4. Constant superannuation contributions
- 5. Default placement into an account-based pension
- 6. Personal situation:
 - a. You have a partner
 - b. You and your partner own your house
 - c. You and your partner have no assets outside of super
 - d. Your partner is the same age
 - e. Your partner has an identical superannuation balance

Many calculators provided by super funds are basic and provide limited flexibility. An anecdotal review identifies <u>ASIC's MoneySmart Retirement Planner</u> as one of the more detailed calculators. It addresses many of the issues detailed above. However, it remains a deterministic calculator, it cannot account for the return assumptions of lifecycle strategies, has limited ability to account for a varying contribution plan (only via career break functionality), and doesn't allow for a broader range of retirement solutions. It also does not allow for spending down non-super financial assets – an important assumption in <u>Grattan's analysis</u>; in effect consumers are not receiving guidance in a consistent manner with how a leading policy advice is undertaking adequacy calculations.

There are also more complex issues which apply at a household level that are not considered, such as joint mortality modelling and home equity release products.

The differences between a more considered retirement income estimate and ones available from statements and calculators could significant, based on:

- 1. Inaccurate, assumption-based information about the member and their household (could contribute to understatement or overstatement)
- 2. Modelling for deterministic outcomes which provides no safety buffer (via precautionary savings), and hence would be an inappropriate course of action for any rational risk averse person (this would contribute to overstatement)

Future challenges will also emerge, especially in the form of a large array of retirement solutions, especially if CIPRs in current proposed form become reality (whereby financial planning software may be required to model out a range of CIPRs, which may be complex combinations of underlying building blocks).

The permanently misinformed consumer

In the present setting many Australians are will never receive appropriate guidance with respect to an appropriate consumption level in retirement. Worse, they are likely to be misinformed and provided consumption forecasts which in many cases will be overstated.

This has two important impacts:

- 1. If members take the calculations as guidance, many will overspend and exhaust their retirement savings (this could be partly mitigated by receiving updated forecasts periodically, assuming conditional mortality forecasting techniques are applied).
- 2. Loss of confidence in, and general frustration with, the retirement system. This may take the form of overly conservative spending in retirement.

Additional challenges

Additional challenges include, raised but not addressed in this essay:

• The impact of cognitive decline on financial decision making (see for example <u>Earl et al</u> (2013)) represents a challenge which may require human and trust-based guidance rather than a digital solution

Possible solutions

Possible solutions include:

- More financial advisers but advice is viewed by many as too expensive, and there is a supply provision issue as well
- Measures to improve the provision of guidance. Examples include:
 - Through policy, such as making it a requirement for MySuper licensees to provide a RIE
 - Through regulatory encouragement. For example, the quality of guidance could be included as part of APRA's outcomes assessment and heatmap reviews
 - Through industry competition, with active assessment by superannuation research houses
- A national solution which:
 - Continues to build on the success of ASIC's MoneySmart Retirement Planner and continued development of a more detailed calculator
 - Consideration of a government sponsored financial planning service, particularly in the areas of scaled advice