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Investment Perspectives

May 2015



GLOBAL LESSONS
IN DEVELOPING
POST-RETIREMENT
SOLUTIONS

Blending growth,
income and protection
for DC retirees



Schroders

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Executive summary

We have researched many post-retirement systems around the world. No market has fully solved the puzzle of a successful post-retirement strategy. The long-term nature and degrees of uncertainty involved often lead to conflicting objectives, apparently impossible to achieve simultaneously.

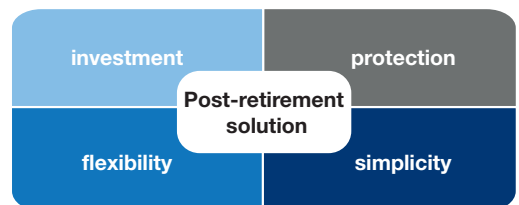
The move from Defined Benefit (DB) to Defined Contribution (DC) has transferred the longevity and investment risks from the plan sponsor to the individual plan member. Without the actuarial cross-subsidies implied by pooling these risks, the danger of outliving one's savings is significant. We need to find a better solution to this problem than an early grave.

There are lots of variables in retirement; how long people will live for, the costs of goods and services they will need, interest rates available on their accumulated savings, and so on. Faced with this amount of long-term uncertainty, people tend to suffer behavioural biases and often make poor decisions. We believe that retirees need help about what constitutes a good quality retirement solution to help nudge them in the right direction.

Politics plays a significant, and often unhelpful, role. Due to election cycles and partisanship, politicians often have far shorter time horizons than retirement savers, and the most popular, vote-winning policies are not always the most suitable in the long term. The merry-go-round of post-retirement systems around the world, demonstrating 'progress' by politicians, does not help retirees in the long term. Any solution must have long-term cross-party support or, even better, complete isolation from political interference.

We observe that there have been insufficient contributions made into DC plans in the majority of countries we have researched. Our key conclusions are that, in addition to sufficiency of pre-retirement savings, a successful post-retirement strategy requires:

- Stable, real investment returns, net of costs
- Reliable protection against longevity risk, particularly later in life
- Flexibility to adapt to changing requirements
- Simplicity in implementation and communication of outcomes.



A successful solution will inevitably be a blend of investment and insurance components in a balanced manner. With lengthening life expectancies, we anticipate strategies will blend a growth and income account-based approach for the first 15-20 years after retirement with longevity protection engaging in later life. However, an over-arching solution is far broader than simply a fund or insurance product.

We found that the majority of systems currently in place do not achieve satisfactory results on these key requirements. We suggest that solutions could be 'approved' as meeting a set of specific 'needs' criteria, therefore enabling better guidance for individuals at this difficult decision point.

Where a fiduciary is involved, for example in a corporate plan, an individual could be given a short-list of suitable investment funds and a short-list of suitable longevity protection options from which to choose. The individual would also choose the proportion to allocate to the investment component and the remainder to the protection component. A minimum proportion could be imposed on each. If permitted and tax-efficient, a partial cash lump sum might also be taken at point of retirement. For retirees where no fiduciary is involved at retirement, providing guidance about the need to have both investment and insurance components and having approved choices should help retirees with this difficult decision and improve outcomes for them. Asset managers and insurers should take some responsibility for the thoughtful design of these strategies.

Not all retirees can afford a Ferrari, but most would prefer their retirements to be slow and comfortable, rather than quick and costly. Our suggested approach succeeds in shifting the starting point of the post-retirement conversation towards a healthier long-term solution, giving retirees the deserved opportunity to maximise their financial longevity.

1.

Introduction

Why is post-retirement investing so difficult? What do people actually need in retirement?
Does any market have the right answer?

Around the world, many are asking these questions, and that spurred our research into post-retirement systems with the aim of identifying best-in-class approaches. It also made us think carefully to what extent individuals and countries are using solutions and products that are suitable for their needs.

There are so many complex issues involved in post-retirement solutions: insufficient savings, low bond rates in many countries, lack of financial knowledge, opaque products, regulations, savings outside the system, fiduciary liability, political pressure, and the role of the state as a safety net, to highlight a few. It is hardly surprising that the 'killer solution' is somewhat elusive. Added to this, the numbers of people involved are vast and growing due to improving longevity; at the end of 2013 more than 560 million people¹ were aged over 65, by 2050 this is expected to be over 1.5 billion².

However, given that everyone in retirement is facing the same issues wherever they live, these being the risks of living longer than expected and spending more than expected, an answer needs to be found. The issue of not having enough to live on is most likely to be solved by increased savings rates before retirement. We discussed in our pre-retirement report "Lessons learnt in DC from around the world"³, the majority of people globally have not saved, and are not saving, enough for their retirement, especially given improving life expectancies. While normal retirement ages are edging up in many countries, the pace is generally not enough to offset the increased expected lifespan – the expected time spent in retirement is therefore also increasing. Individuals, and plan sponsors on their behalf, must increase contributions and invest in assets generating returns above inflation in order to aim for a satisfactory target portfolio value by retirement.

Solving the problem of running out of money before an individual dies, while also providing flexibility, is the more difficult technical issue to solve. We will address this in section 3 of this paper.

1.1 Has anyone found the answer?

If everyone is facing the same challenges in investment, surely the way to invest an individual's assets in retirement would be universally agreed? However, as we show in Figure 1, there are three main solutions (annuities, cash lump sums and programmed withdrawals from individual accounts), none of which is individually 'perfect'. Solutions are clustered around one (or more) of these three component strategies. Additionally, as we discuss in section 2 of this paper, post-retirement practice is a politically sensitive subject which often results in solutions changing with the party political cycle.

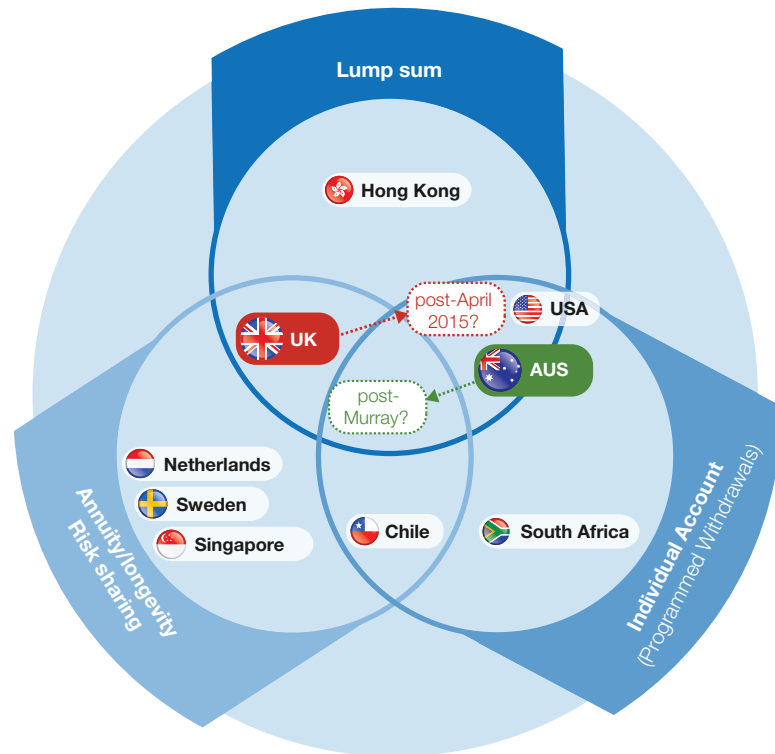
Retirement systems around the globe are unique to each market, reflecting their system's history, politics and cultural preferences. In Europe, the starting position for many countries has been that annuities are the appropriate solution for retirees. This is likely based on their similarity with DB benefits that provide a familiar, predetermined level of income for life. In Latin America, the Chilean pension system has been used as a template by many others in the region, and programmed withdrawals have been growing in popularity. While in Asia, lump sum payments are far more common than elsewhere.

¹ World population at end of 2013: 7.125bn, of which 7.9% were aged over 65, Source: The World Bank.

² <http://www.prb.org/Publications/Articles/2011/agingpopulationclocks.aspx> – Population Reference Bureau.

³ Lessons learnt in DC from around the world. Schroders. April 2013.

Figure 1: The most prevalent options taken in retirement for selected DC markets



Aus=Australia: The Murray report is a comprehensive review by the government on post-retirement provision. UK: Changes to UK legislation effective from April 2015 has removed several barriers to the use of lump sums and programmed withdrawals. Profiles for each country provide details of each system in the appendices. Source: Schroders, for illustration only.

As we discuss later, we do not believe that any one of these approaches is appropriate on its own. Hybrid systems, for example incorporating the flexibility of programmed withdrawals with the certainty of an income in very old age through an annuity or similar, are more likely to meet the multiple needs of individuals.

1.2 Too many cooks or not enough broth?

Multiple stakeholders are likely to be involved in solving this challenge for retirees including governments, plan sponsors, consultants, academics, asset managers and insurers. However, agency risks often prevent a common-sense solution being provided:

- Plan sponsors in countries where litigation risk is high, such as the US, do not want the risk of being financially responsible for their ex-employees.
- We observe that insurers are powerful in markets where annuities are/have been mandatory (e.g. UK) but significantly less so in markets where annuities are unpopular or tax-inefficient (e.g. Australia).
- Asset managers often are commercial asset-gathering organisations selling products to meet market demands, but not necessarily meeting an individual's long-term needs.
- Most agents have a vested interest in not actively encouraging individuals to 'shop around' for better solutions.
- Politicians seek to provide popular solutions, which are often in conflict with satisfactory long-term solutions.

In this paper we seek to address the problem from the point of view of the individual. What does he or she need in retirement to achieve the outcome they need efficiently i.e. not running out of money before they die, while also allowing for flexibility in case of needing some cash urgently at short notice?

1.3 How much do individuals need?

In order to address the issue of running out of funds in retirement, we first need to establish how much individuals need in retirement. This has been the subject of much academic research^{4,5} so we will not recalculate that work but the answer obviously depends on a number of factors such as:

- The costs of living, including healthcare and long-term care costs where relevant
- The impact of future inflation on these costs
- The interest expected to be earned on retained savings
- The expected future lifetime of the individual.

This amount is generally provided by a combination of sources – the state, corporate and personal pension savings and additional assets.

Studies in the US have shown individuals need 16 times salary as a retirement account (broadly split 30% state and 70% corporate/personal plus savings)⁵. However, the reality is that, even for a retiree with over 30 years of contributions, the average 401(K) account size for those nearing retirement is only around \$250,000⁶ (around 5 times average final salary). While this may not be an enormous issue currently, as DC plans are not the only source of funds for many retiring now, many DB plans are closed and so DC will be required to provide more of the heavy lifting in future.

In the UK, many DB plans promised provision of 2/3rds of final salary at retirement after 40 years of employment. Using current UK life tables and interest rates, this equates to building up a retirement account of around 12 times final salary (on a single male life, level annuity basis). Many DB plans offered additional guarantees, such as increases with inflation and payments to a spouse following the employee's death. When factoring in these benefits the equivalent DC pension pot may need to be as high as 19 times final salary.

In Australia the government provides guidance to individuals about how much they need to save into their DC plan in order to attain two different living standards, modest and comfortable. The largest difference between these living standards is the level of 'Leisure' spending it allows, with a comfortable lifestyle allowing almost 3 times the amount to be spent per week on this discretionary category compared to those with a modest lifestyle⁷. As multiples of salary at retirement the two standards equate to around 7 times salary to cover a modest lifestyle with this rising to almost 13 times in order to provide a comfortable, but still not luxurious, retirement lifestyle⁸. As with the UK, if inflation is factored into retirement benefits, the multiple could be as high as 17 times salary for a comfortable lifestyle.

For our analysis in this paper we have assumed an individual has a retirement account of 12 times their final salary, and target a pension income of around 60% of their final salary. This broadly relates to having sufficient savings at the point of retirement, allowing us to focus on the post-retirement issues in isolation.

⁴ How much to save for a secure retirement – Munnell, Webb, Golub-Sass – Center for Retirement Research at Boston College, November 2011.

⁵ The Real Deal: 2012 Retirement Income Adequacy at Large Companies. AonHewitt.

⁶ Based on account holders in their 60s with >30 years of contributions. Issue Brief 408, Employee Benefit Research Institute. December 2014.

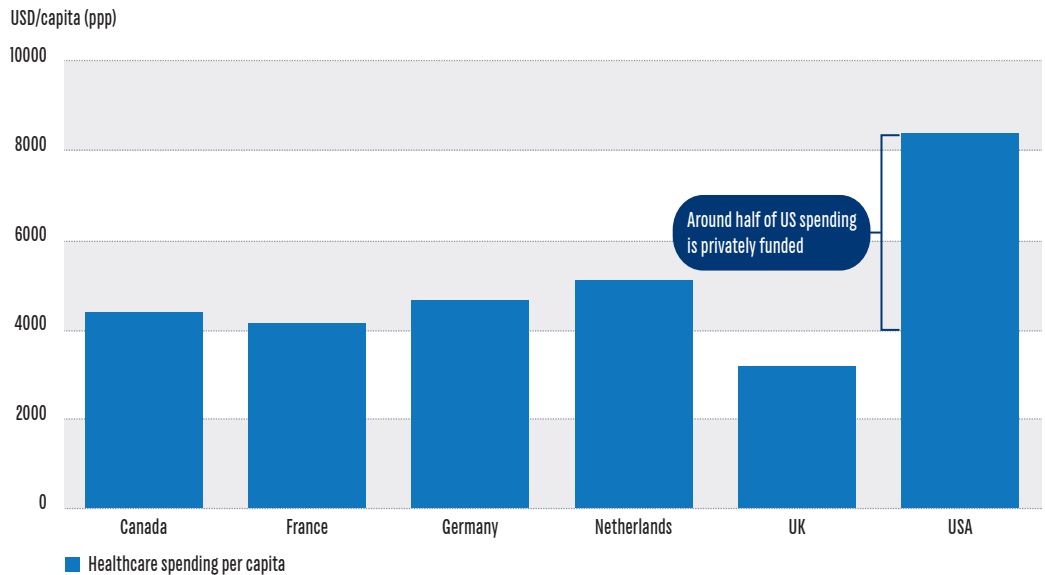
⁷ ASFA Retirement Standard, December quarter 2013.

⁸ MoneySmart – Financial decisions at retirement. Australian Securities and Investments Commission. As at December 2013. Schroders estimates.

1.4 Ill health and care for the elderly

When people live longer, the issue of ill health and long-term care for those living with degenerative diseases becomes more important. In developed countries with aging populations, healthcare costs can be extreme, as we see in Figure 2 below.

Figure 2 – US medical costs are the world’s highest and require significant private funding



Source: OECD Health Statistics. OECD iLibrary. Data as at December 2012.

While we do not address this issue explicitly in this paper, flexibility in the investment solution is imperative in order to deal with the risk of requiring cash at short notice.

Summary

Achieving sufficient income to meet retirement needs, given expectations for increasing lifespans, is a huge problem that everyone faces. There are multiple stakeholders and there is no clear textbook solution. It is hardly surprising, therefore, that individuals in systems that provide a range of retirement options are uncertain about the best approach to take.

The issue of how to invest retirees' assets is politically charged as it involves large sums of money and a huge proportion of the voting community. The inherent conflict between success for the individuals being measured over decades but all other stakeholders having a far shorter horizon compounds the matter further.

Every country has a different way of dealing with this issue but many have not (yet) spent a lot of time thinking about how to solve the challenge for small asset sizes or small proportions of individuals' retirement accounts. However, a number of DC markets are mature, such as Australia and Chile, and a solution that works for all must be identified.

In the following section we look in more depth at the influences on post-retirement solution design before addressing what individuals need and the features required in a successful post-retirement solution.

2. Influences on post-retirement solution design

We found the influences on post-retirement solution design to be somewhat different to those affecting pre-retirement. There are some similarities, tax and regulation being the two most obvious; but other factors, such as politics and culture, have far greater impact than in pre-retirement. The key factors influencing post-retirement in order of impact, in our opinion, are:

1. Regulation and legislation
2. Taxation
3. Politics
4. Culture and behavioural biases
5. The need for simplicity
6. Improving life expectancy
7. Semi-retirement/phased retirement/flexible retirement trend
8. Innovation
9. Depth of the market
10. The impact of health

Many of these factors are inter-linked. Below we provide further detail and examples from our global research to provide some colour to these factors.

2.1 Regulation and legislation

Regulation arguably has the largest impact on solution design. If individuals are not permitted to invest their retirement savings in certain vehicles or products then there is no opportunity to design alternative strategies that include them. In some markets lump sums (or partial lump sums) are permitted at retirement and, where these are also tax-free or tax-advantageous compared to the alternatives, the take-up is generally high.

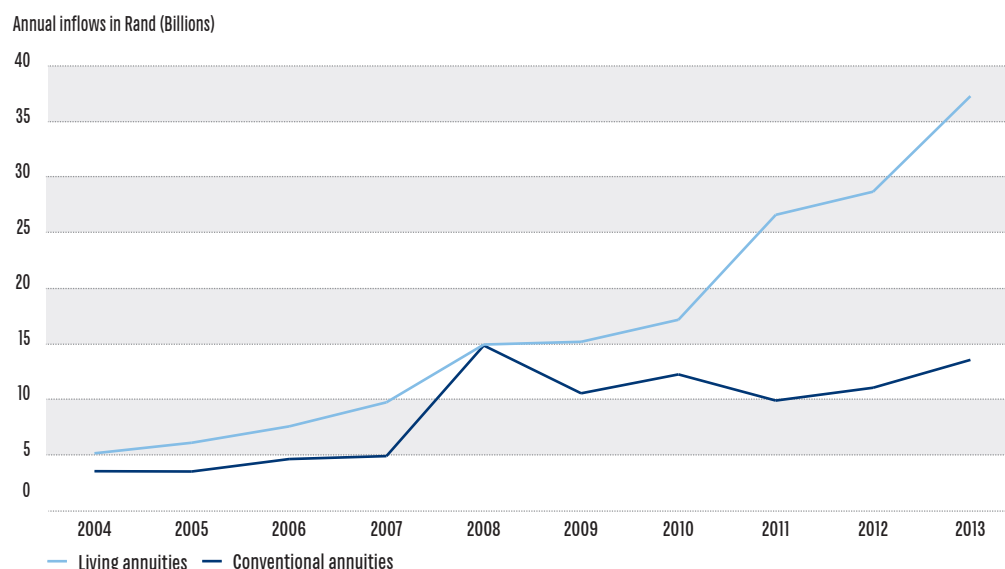
Some pension markets have very prescriptive regulation about the investment vehicles in which post-retirement savings can be invested, as we discussed in the first section of this paper.

A number of European countries, such as Poland, Bulgaria and France dictate that individuals buy an annuity at retirement.

In South Africa, individuals invested in provident funds are permitted to take the full benefit in cash; those invested in pension funds can take up to a third of the benefit in cash, with the remainder individuals have to buy an annuity. This has led to a large number of different types of 'traditional' annuities and also the development of 'Living Annuities'. In reality, living annuities are not annuities at all and are legally not allowed to provide any guarantees. They are tax-protected phased-withdrawal products i.e. investment funds where the retiree decides to draw down a percentage each month out of his/her fund(s). Legislation limits the annual drawdowns to between 2.5% and 17.5% of the value of capital invested. The level and frequency of income can be typically reviewed annually. South African law regards these products as annuities for tax purposes⁹. This regulation allowance has permitted a large range of non-guaranteed products (with no longevity protection) to become the dominant choice for retirees, as shown in Figure 3.

⁹ Enabling a better income in retirement, South African National Treasury, 21 September 2012.

Figure 3: Living Annuities have become the dominant choice for South African retirees



Source: ASISA, December 2013.

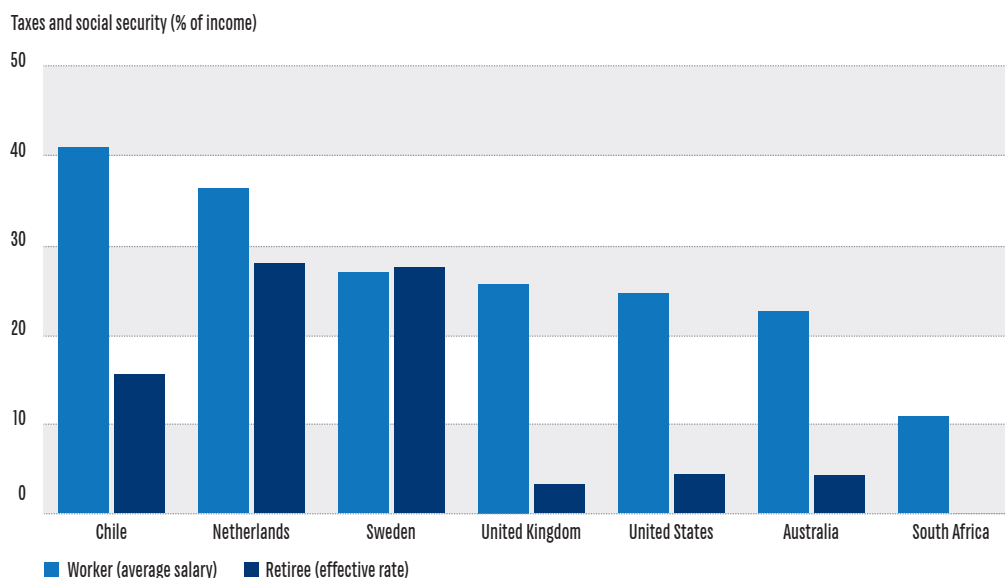
2.2 Taxation

Closely linked to regulation is taxation policy, which is often more complex in post-retirement than in pre-retirement. Many tax systems offer incentives in the accumulation stage but, except for in a small number of countries, this is only a deferral until income is drawn in retirement. As we can see in Figure 4, the overall proportion of income paid in taxes and social security contributions tends to reduce for retirees. Many country's tax systems charge retirees a lower tax rate, through additional income allowances, lower income tax rates or both, and either reduce or remove the payment of social security contributions.

In countries where there are high levels of taxation during employment, such as Scandinavian countries, it is common that the rate of income tax remains high in retirement. The UK, US and Australia have very different headline rates of taxation for retirees but through the tax reliefs offered we see that these result in similar effective rates. In South Africa and other developing countries, pension income is taxed at a low or zero rate.

Where countries levy high levels of income tax on retirement income it is likely that retirees will underestimate the impact of taxation on their income, compounding the impact of any shortfall in their accumulated wealth at retirement.

Figure 4: Net tax rates can remain significant in retirement

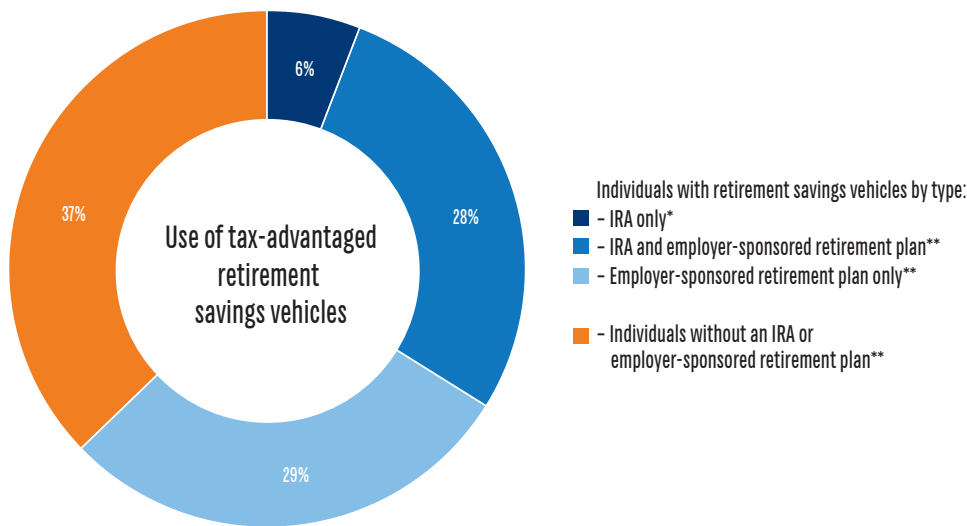


Source: OECD Pensions at a glance: Retirement-income systems in OECD and G20 countries 2011.

If products available to retirees are not tax efficient, they will not be widely used. In Australia, in addition to some regulatory barriers that restrict the availability of annuities, one of the key impediments to the take-up rate is that the initial tax treatment of deferred lifetime annuities (DLAs) is penal compared to that applied to investment earnings on superannuation assets supporting retirement income streams.

In the US, individuals must leave their investments in their 401(k) or roll them into a product that is tax-advantaged for retirement (such as an IRA). As a result of this tax rule, unsurprisingly a growing percentage of retirement savings are in these types of vehicles: IRAs amounted to \$7.3 trillion in assets at the end of the fourth quarter of 2014, representing more than one-quarter of U.S. total retirement market assets, compared with 18 percent two decades ago¹⁰. In Figure 5 we show the percentage of US households that have tax-advantaged retirement savings.

Figure 5: A significant proportion of US households use tax-advantaged retirement savings vehicles



* IRAs include traditional IRAs, Roth IRAs, and employer-sponsored IRAs (SEP IRAs, SAR-SEP IRAs, and SIMPLE IRAs).

** Employer-sponsored retirement plans include DC and DB retirement plans.

Source: The Role of IRAs in U.S. Households' Saving for Retirement, 2014, ICI Research Perspective, January 2015.

In a number of markets, for example Hong Kong, a cash lump sum can be taken at retirement tax-free. This provides full flexibility to individuals to invest as they want in retirement.

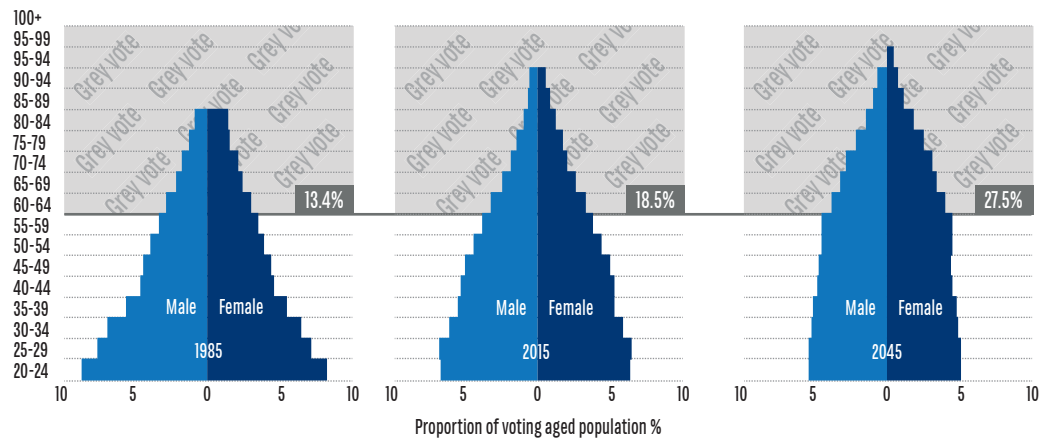
Note that we are not tax specialists – we are merely registering that taxation policy has a large influence on the design of post-retirement solutions.

¹⁰ The Role of IRAs in U.S. Households' Saving for Retirement, 2014, ICI Research Perspective, January 2015.

2.3 Politics

Most pre-retirement systems are far less affected by politics than post-retirement. However, individuals who have retired or are approaching retirement represent increasing population proportions in many countries (see Figure 6) and therefore a large number of votes and an even larger proportion of wealth.

Figure 6: The world's population aged over 60 is set to increase in both proportion and influence



Source: <http://populationpyramid.net/>, United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects: The 2012 Revision. (Medium variant).

Retirees are also generally more engaged with politics and rules regarding the amount they have available to spend, or the flexibility they have to spend it, are clearly of significant interest to them. Additionally for markets where pension savings accounts have existed for many years, the pension system can represent a large proportion of the country's GDP or even more (e.g. Netherlands where it represents 1.6 times GDP¹¹).

Politics can have overtly detrimental impacts on retirement accounts; for example Argentina and Poland have, in recent times, expropriated individual's private pension accounts before retirement. At the more paternal end of the scale, politicians in Singapore implemented a government-administered post-retirement annuity fund, called CPF Life. However, CPF does not bear any investment or longevity risk because these risks are shared among the individuals in the fund and if experience is worse than expected, those in the pool have a reduced income. This is similar to the 'Collective DC' pooling mechanism in the Netherlands.

Politicians do not seem to (want to) be able to decide what an ideal post-retirement system should offer to individuals. Retirement savings and spending are very long-term issues; politics, by comparison, is a short-term game. As we discussed earlier, the criteria by which retirees value their benefits vary significantly and some of these can be contradictory. Take for example the 'flexibility vs certainty' criteria. Individuals often believe that having flexibility is beneficial to them so that they are not tied into a particular product/income stream if their circumstances change in retirement. However, many are not equipped to make the decision about the appropriate long-term strategy and may also not be able to plan use of their income, resulting in depletion of assets well in advance of death. For this reason, politicians fluctuate on what is appropriate. Politicians responsible for pensions/retirement are generally not in position for the long term and therefore may not necessarily have individuals' long-term best interests in mind. Today's popular, vote-winning policies all too often involve picking tomorrow's pockets to fund them.

Let's look at the contrasting case studies of the UK and Australia. For nearly 60 years, the UK had a system of compulsory annuity purchase for the majority of an individual's account at retirement. Annuities provide income for life, and there is flexibility so people can choose fixed or inflation-linked payments, with or without spousal benefits etc. As a result of this requirement for annuity purchase, the insurance industry in the UK grew significantly.

¹¹ OECD Pension funds' assets (indicator) as at December 2013. <http://data.oecd.org/pension/pension-funds-assets.htm>.

In 2006, the UK government started to allow some flexibility for those with larger retirement accounts; they were permitted to draw down from their account rather than buy an annuity. Then in 2014, after much lobbying to remove the compulsory annuity purchase requirement (particularly due to low bond rates), the government announced a complete overhaul of the system. Individuals are now free to take all of their account from retirement in any form (subject to paying income tax). Given weak economic growth at this time, the Treasury is keen to see people bring their retirement spending forward.



Simultaneously, in Australia, the government's investigation into pension provision, as part of a wider assessment of the country's financial system known as the Murray report, suggested that some or all of an individual's pension account should be used to buy an annuity¹². This has been driven from a concern that people will deplete their pension accounts due to underestimating life expectancy. This could pave the way for deferred annuities to form part of the retirement solution in Australia, where historically there have been regulatory and taxation issues preventing their use.

So at the same time the Australians are potentially moving away from full flexibility, the British are embracing it. Clearly, both cannot be correct in a financial context. There is a merry-go-round of solutions around the world predicated on each successive political party trying to demonstrate 'progress'.

2.4 Culture and behavioural biases

In systems where individuals are free to spend their retirement account as they please, the way in which these assets are used differs widely, often due to the culture and historical practice. In Hong Kong, having received the full retirement account in cash at retirement, it is common for individuals to leave the vast majority of this (90%) in bank deposits¹³.

In Australia, the recent Murray report highlighted that 'behavioural biases explain the dominance of account-based pensions and lump sums'¹² and other research¹⁴ has highlighted the Australians' 'strong preference for flexibility and financial control over retirement wealth'.

In some markets, risk sharing is prevalent. This involves grouping individuals together to pool mortality risk or investment risk (or both), as we discussed earlier in the case of the Singapore CPF Life system. This requires members to 'trust' that the amount of pension income they receive will be calculated fairly. It also requires individuals to be committed to the approach for their lifetime. If they are not, individuals can use knowledge about their own expected mortality to enter or leave the pool when it is most advantageous to them, and therefore detrimental to the overall system. It's an approach that makes sense in cultures that have higher levels of societal solidarity, such as the Netherlands. In addition, this type of system needs to have an ongoing source of new members to ensure a fair spreading of risk. At times of weak investment results and/or when a cohort survives longer than expected, the system deliberately gives potential for cross-generational subsidy.

The behavioural concept of anchoring also plays a big role in retirement. From 1978 in the UK, retirees were also encouraged to shop around for the best annuity price at retirement. Historically, the use of this option has been low and recent surveys still show a significant number of retirees (37%) do not investigate this option and a further 31% remain with their existing provider even after considering their options¹⁵. Over two thirds of retirees remain anchored to their pre-retirement provider. A UK parliamentary study in 2014 found that fixed annuities (level payments for life) were, by far, the most popular option (87%) compared to those taking an inflation or investment-linked annuity¹⁶, seemingly due to the higher initial nominal income level.

¹² Financial System Inquiry, Final Report. The Australian Government the Treasury. November 2014.

¹³ 2009 Retirement Life of Third Agers survey, BCT Third Age Academy, Chinese University of Hong Kong.

¹⁴ The Pay-out Phase of Pension Systems, Rocha, Vittas, Rudolph, The World Bank, Financial and Private Sector, Development, Non Bank Financial Institutions Group, April 2010.

¹⁵ Association of British Insurers 2013 Survey. Pension Annuities: A review of consumer behaviour. Financial Conduct Authority. January 2014.

¹⁶ Data based on first three quarters of 2013. House of Commons Library, Business and Transport section. May 2014.

Culture also plays an important role in relation to gifting or leaving a legacy to children. In some countries such as the UK, Australia and the US, retirees expect to gift significant amounts while alive or provide a legacy on their death¹⁷. Children also expect to receive these amounts. This has implications for post-retirement solution design; flexibility is required to set aside these amounts, taxation of these amounts needs to be supportive of transfer and retirees need to be able to calculate how much they will have to live on taking into account these legacy amounts. In other markets, the opposite is true – in many Asian countries, elderly parents are housed and supported by their children. There, the need for savings deep into old age is less pressing.

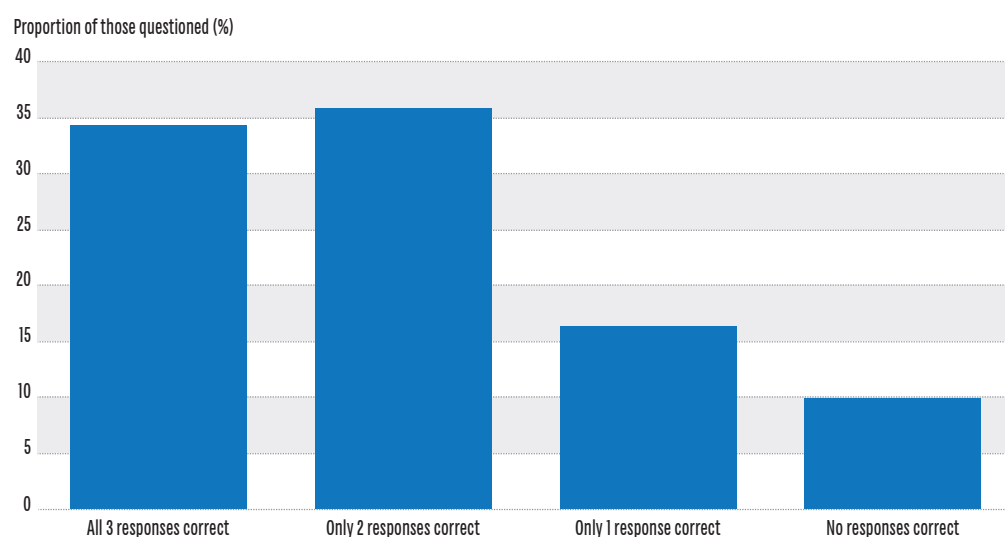
2.5 The need for simplicity

In many studies we reviewed as part of this research, ‘simplicity’ was stated one of the cornerstones of post-retirement solution design and while we agree with the sentiment behind this idea, we question whether simplicity in itself is the answer or if some straightforward guidelines on suitable solutions for retirees makes more sense.

Studies have shown globally that ‘low levels of financial knowledge are pervasive’, that it is not clear whether education alone will be enough to improve this position, or which types of financial education programmes are likely to have the most impact¹⁸. Coupled with a study¹⁹ that shows cognitive performance declines after age 53, it seems that individuals are not suitably equipped to be solely responsible for their post-retirement planning, especially when many of these component products can be relatively complex. This may imply a somewhat paternalistic approach in some markets but we believe that many will be looking for this level of comfort.

So would the availability of only simple products improve an individual’s ability to select the appropriate retirement strategy and would it improve the outcome that an individual experiences in retirement? This is a difficult question to answer as there is no clear classification for ‘simple’ as it is subjective, based on an individual’s financial knowledge. Studies have shown that, when individuals are asked three questions about compound interest, the impact of inflation on savings and whether more than one stock in a portfolio represents better diversification, less than 35% of those asked got all three questions correct²⁰. Figure 7 highlights this finding for the US, a country that has one of the world’s most advanced financial services systems.

Figure 7: Only a third of those surveyed could correctly answer 3 basic questions on finance



Source: NBER Working Paper: The Economic Importance of Financial Literacy: Theory and Evidence. April 2013

¹⁷ HSBC: The Future of Retirement, Life after work 2013.

¹⁸ The Economic Importance of Financial Literacy: Theory and Evidence, Lusardi and Mitchell, Journal of Economic Literature 2014.

¹⁹ The Age of reason: Financial Decisions over the Life-Cycle with Implications for Regulation, Agarwal, Driscoll, Gabaix, Laibson, Brookings Papers on Economic Activity, October 2009.

²⁰ NBER Working Paper: The Economic Importance of Financial Literacy: Theory and Evidence. April 2013.

This would lead us to believe that ‘simple’ for the majority of people would mean extremely simple in practice – it may not include multiple asset classes in one product. The simplest investments such as cash or bank accounts are not likely to result in a better outcome for the majority of individuals trying to plan over an unknown, but long, time horizon with spending needs that are likely to rise with inflation. In investment terms, ‘simple’ sometimes gets mistaken for ‘easy’, leading to index-tracking strategies being adopted. As we have seen in pre-retirement investment strategy, a blindly-implemented passive strategy has significant risks for the real-world outcomes that savers and retirees need.

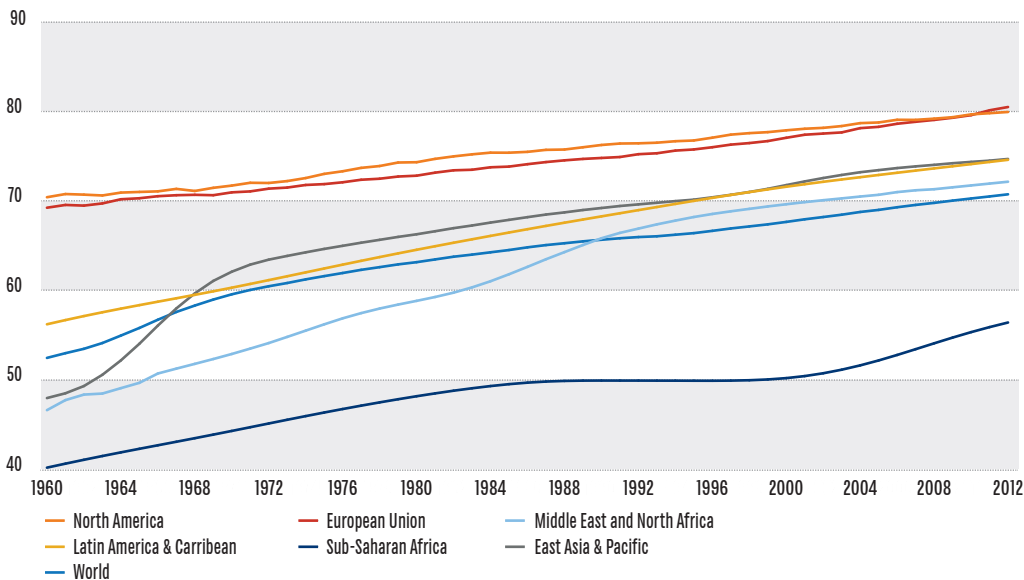
Perhaps simple means ‘simply communicated’, but the underlying solution can be complex. It is certainly possible that this approach can improve the outcome for individuals. However, the risk of this approach is that if something goes ‘wrong’ with an element of the strategy and individuals did not feel that the product was fully communicated to them, they will look for compensation. It is probably more likely in this scenario that there will be a mis-selling scandal.

Finally, there has been recognition in most markets that many individuals are unable to make suitable investment choices and this has led to the introduction, and heavy use of, default options in pre-retirement to steer people towards sensible savings strategies. How do we expect individuals who have not had to think about the appropriate investments in pre-retirement to suddenly gain the financial knowledge to choose the appropriate investment at retirement, which is a time of stress and, perhaps for some, declining cognitive ability? Perhaps simple should mean a set of principles that help guide retirees to a suitable post-retirement strategy.

2.6 Improving life expectancy

Life expectancy is improving in the majority of countries, as shown in Figure 8. This impacts not only when people expect to retire but the solutions they want and need. Increasing numbers of people expect to semi-retire, so require flexibility about the amounts that they can take – we discuss this further below.

Figure 8: Life expectancy is increasing around the world, across all regions



Source: World Bank, Latest data as at December 2012.

Annuity products offering guaranteed amounts for life can give peace-of-mind to those concerned that they will not be able to manage their finances for their lifetime (or may live longer than they expect to). These products are particularly popular in Western Europe where they have been culturally embedded by the design of DC pensions primarily shaped by the DB plans that preceded them.

Even the recent increases in normal retirement ages in many markets have been too little, and too late, to have much of an impact – the expected time spent in retirement continues to go up, and with it the expected financial requirements.

2.7 Flexibility in retirement trends

Individuals are opting to work more flexibly in retirement²¹, often by choice in order to maintain their lifestyle, enjoyment of the job/working with others or to stay mentally active. This results in a need for post-retirement solutions that allow individuals to take only a portion of their pension initially and to take more later, when fully retired. Products such as traditional annuities offer less flexibility for such a workforce.

2.8 Innovation

Those familiar with the post-retirement market in Australia will know that one of the biggest hurdles that it has faced in recent years in relation to innovation has been the impact of regulation. This was highlighted by Rice Warner, a specialist research firm, in the final report of the Financial Systems Inquiry¹² which stated that, without supportive regulation, providers would not innovate.

So if Australia has a post-retirement market that has done little to innovate, what markets do have innovative post-retirement solutions and products?

In the US, variable annuities provide a minimum guaranteed amount supplemented with a variable non-guaranteed element. However, guarantees involve capital requirements for their providers, so these are likely to be less attractive to insurers in future. Instead, longevity insurance (also known as a deferred annuity) deals with the issue of living much longer than expected. Typically these are bought at retirement, either with a lump sum or in tranches, and start to pay out when an individual reaches 80 or 85 years of age. In the US these products were not well utilised because of the IRS's minimum distribution requirements (it needed to be 'accounted for' when calculating how much to withdraw as an income). These rules were changed in July 2014²² to 'make longevity annuities accessible to the 401(k) and IRA markets'. An issue remains about whether individuals will buy these products (because culturally Americans have been averse to tying up their capital in this way) but the change will likely result in more innovation in post-retirement design.

Another innovative approach we discussed earlier is mortality pooling, which is common in the Netherlands. This involves intergenerational risk sharing and transfer. As we covered in our paper 'Collective DC – digging a deeper hole'²³, this approach has some beneficial attributes as it can provide economies of scale but essentially is self-annuitisation by the group of plan members. This assumes that all individuals will want an annuity, will 'trust' that they are being treated fairly and that the population of the plan continues to grow. It means that any 'insurance profit' is spread among the participants and this is an attractive innovation for those that want an annuity.

In many countries with maturing DC markets, such as Australia and Chile, there is a recognition that new solutions are needed to address the risks that individuals face and so we expect to see considerably more innovation in this area in the next five years.

Later in this paper we will cover innovative ideas including hybrid strategies and other approaches such as reverse mortgages, some of which may make sense for certain individuals.

²¹ HSBC: The Future of Retirement, Canada: 27% expect to be fully retired at the retirement age of 66 (Sun Life Canadian Unretirement index 2014), Australia: 20% of men and 60% of women expect to work part time in early retirement (NATSEM, University of Canberra November 2009), US: 64% of American workers expect to work in retirement (Transamerica Center for Retirement Studies, February/March 2014), Japan: 1 in 4 workers are post-retirement age (Ministry of Labor, Japan).

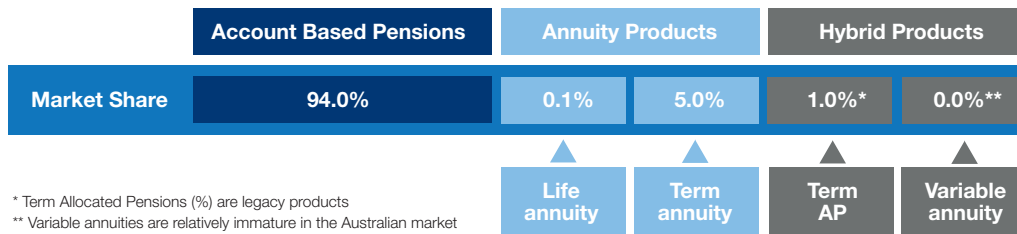
²² US Department of the Treasury, 'Rules provide for greater security by giving American families more flexibility to plan for retirement and protect themselves from outliving their savings', 1 July 2014.

²³ Collective DC – Digging a deeper hole, Schroders, July 2013.

2.9 Depth of the market

It is difficult to be innovative in post-retirement solution design unless there is an existing market (e.g. insurance) or instruments with which to create products. In Australia, the annuity market has been small relative to many other countries, as shown in Figure 9 below (Australia's annuity market is only around 0.3 per cent of GDP, compared with 28.8 per cent in Japan, 15.4 per cent in the United States, and more than 40 per cent of GDP in some European countries)¹² but this has been as a result of a culture-set against using insurance products in post-retirement and regulation/taxation that has made some of these products disadvantageous. This may change, however, if a post-retirement default which incorporates longevity protection as one of the minimum features is required following the Murray report¹².

Figure 9: The Australian post-retirement market is dominated by Account Based Pensions



Source: Post-retirement market trends in Australia, Mercers, June 2014

Interestingly, in the US (the world's largest insurance market) few choose to convert their pensions into annuities at retirement. A report by the US government²⁴ estimated only 6% of retirees in the period 2000 – 2006 took this option at a time when annuity rates were far more attractive than at present. It is generally believed that individuals prefer lump sum payments if they have another source of annuity income, such as Social Security²⁵. Another significant factor is that they were not being offered as an option by employers in 401(k) plans due to uncertainty over liability in the event of insurer default. Social security payments were often being brought forward (available from age 62) before they had accrued full benefits, reducing long-term income from this source. The report called for a far greater use of annuities, proposing that the average household with only DC pension provision should consider annuitizing around 50% of their assets.

2.10 The impact of health

While it is not the focus of this paper, it would be remiss not to cover the impact of health on the design of post-retirement products. In a number of countries, in particular the US given the size of the costs involved, poor health in old age is a significant concern because the State does not (fully) pay for healthcare. This means that unexpected ill health, especially long-term ill-health or recurring ill-health, can significantly impact savings. Ways to manage this risk include insuring against the risk or setting aside an amount for this type of 'tail risk'. However, as with all forms of insurance, there is a cost for both approaches that results in lower ongoing income.

²⁴ United States Government Accountability Office: Ensuring Income throughout Retirement Requires Difficult Choices. June 2011.

²⁵ Growing Older in America, The Health and Retirement Study, National Institute on Ageing, US Department of Health and Human Services, March 2007.

Summary

We have outlined a number of influences on post-retirement solution design, all of which can have a significant impact on the availability of certain types of products and the features incorporated.

For the majority of these influences, relatively little can be done by corporations, individuals or asset managers to manage them. Regulation, politics, the depth of market etc. can change quickly with significant consequences. Improving life expectancy, flexible retirement and innovation are all factors that can be managed by the provision of suitably-designed solutions to individuals. We will discuss this further when we analyse the strategies available later in this paper.

In the move from DB to DC pension systems, plan sponsors deliberately transferred the investment and longevity risks to members. Naturally, therefore, many are keen to 'check-out' when the employee leaves, leaving individuals effectively on their own in retirement. Anecdotal evidence suggests that not all plan participants fully appreciate this fact.

In some markets, plan sponsors have fiduciary responsibility for the investment strategies used in pre-retirement but generally not in post-retirement. In the US and Australia, there have been concerns about fiduciary protection for post-retirement as there has been little regulation to protect fiduciaries compared to the protection that they receive in pre-retirement, such as the QDIA rules in the US. As a result, many sponsors have chosen not to offer post-retirement options within their plan. This is not necessarily in the best interests of the individuals in the plan, who are likely to have to pay higher fees outside the plan, for example.

Longer term, in markets where DC is starting to mature, we expect there to be pressure towards a more institutional approach to post-retirement than has historically been the case. This is likely to result in changes to regulation, taxation, culture, fees and governance.

3.

What do individuals need from post-retirement solutions?

In this section we identify the key criteria by which to evaluate the various post-retirement options available to individuals. Then we will evaluate whether the solutions currently available can provide the necessary income over the expected lifetime of an individual.

In order to identify the criteria, it is first imperative to identify the risks that individuals face in retirement. This will provide us with a list of features that meet the needs (although not necessarily the wants) of individuals.

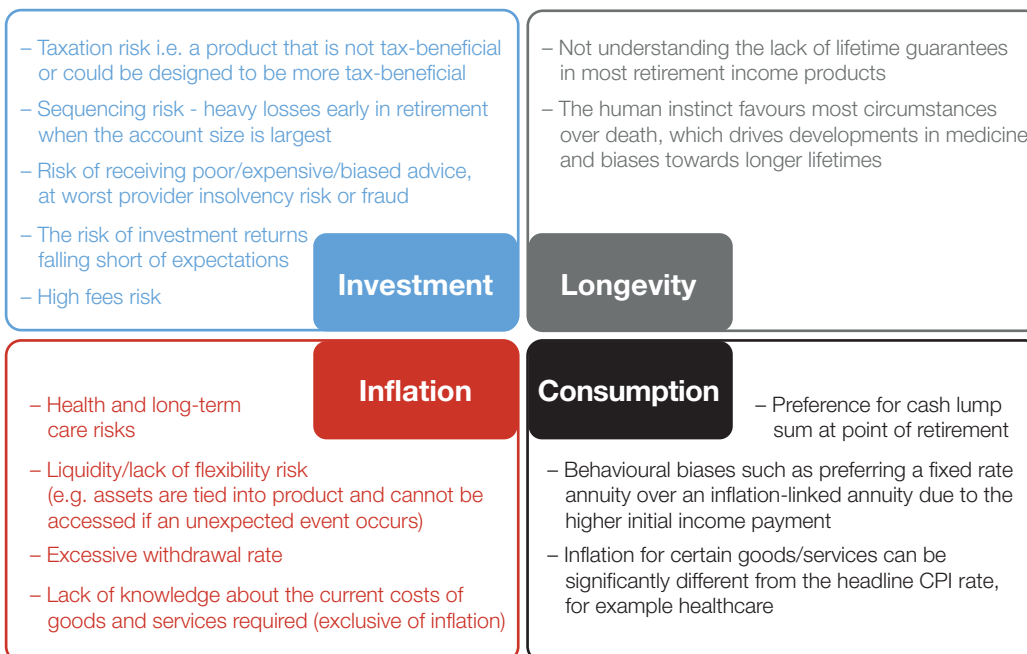
There are four key areas of uncertainty in retirement income provision:

1. **Investment** – the risk of earning less than expected on the investment account. This includes both insufficient growth net of fees as well as large losses near the start of retirement (sequencing risk).
2. **Longevity** – the risk of living longer than expected
3. **Inflation** – the risk of unforeseen price increases of those goods and services. This covers both general increases in inflation of the goods and services as well as spikes in inflation.
4. **Consumption** – the risk of underestimating the amount of goods and services needed in retirement

The risks here are of actual experience turning out to be different from that expected. Note that these are distinct from the significant risk in pre-retirement of not amassing sufficient savings.

Each of these risks can be further broken down into more specific risks, as shown Figure 10²⁶.

Figure 10: The specific risks faced in retirement



Source: Schroders.

²⁶ Schroders, The Next Evolution in Defined Contribution Retirement Plan Design, Stanford Center on Longevity/The Society of Actuaries Committee of Post-Retirement Needs and Risk, September 2013.

3.1 Who bears the risks?

In the world of Defined Benefit, the plan sponsor retains the longevity and investment risks. If the pensions in payment are linked to inflation that risk is also covered, at least partially (inflation-linked increases in payments are often capped and reviewed annually so do not react to sudden increases in prices). The individual generally retains the consumption risk, however, meaning that he may need to spend more than his pension income. Other insurance products are available to cover some of these contingency costs, such as healthcare or asset replacement/repair expenses.

DB plans have to hold sufficient assets to meet the expected liabilities when they fall due, with the ratio of assets to liabilities being referred to as the funding level. Due to the large number of individuals covered, the longevity risks are pooled and are collectively more predictable. An open operational plan has inflows from workers and outflows to retirees, and so short-term investment returns are also smoothed over time. Under this system, those retirees who live longest are effectively subsidised by those who pass away earlier than expected, and benefit payments are independent of investment returns in their size and durability.

In a DC system, each individual, in effect, has their own funding level. However, in the absence of pooling of investment and longevity risk, the variability in these factors has a much bigger impact on that individual's actual experience. The degree of confidence in predicting the mortality experience of 10,000 people is far higher than for one person, even (especially?) if that one person is you. Outliving one's money is a significant risk for millions of retirees all over the world. We need to find a better solution than death.

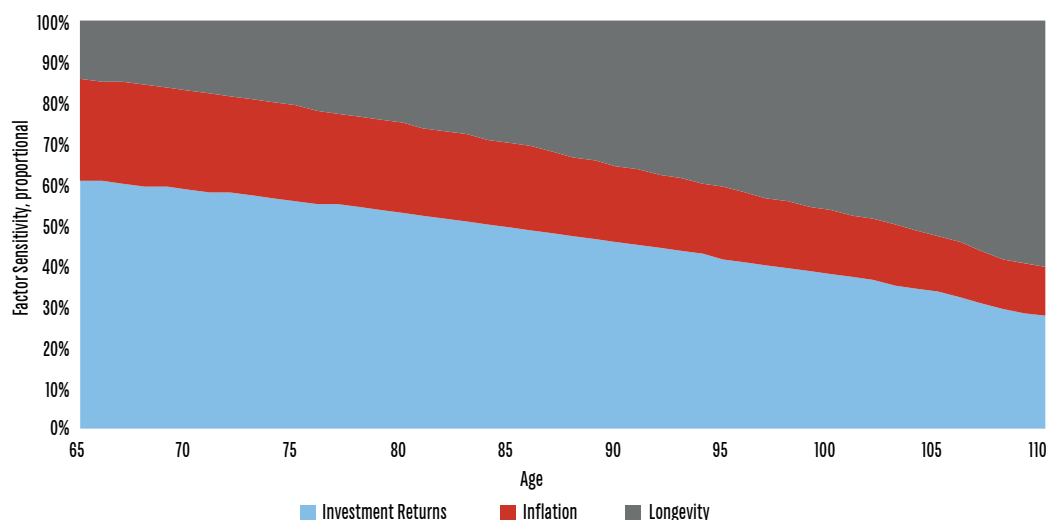
3.2 Quantifying the risks

Multiple dynamics can influence the importance of these risks, as highlighted in Figure 10 above, and the impact of these will change as an individual ages. In order to quantify the sensitivity to each, we compared the effects of a marginal change in each factor on the overall cost of retirement for an individual.

In the case of longevity, we are interested in the additional cost associated with living for longer than expected. In the case of investment returns, the risk is in underperforming expectations. For inflation, the risk is that prices rise more quickly than expected. Consumption is the one variable here that a retiree can control, to an extent, and so we have not included this in our analysis below. Naturally, setting and adhering to realistic budgets in retirement will go a long way to controlling consumption levels.

Figure 11 shows the factor sensitivity at each age, i.e. the impact of a small change to each of these key variables. Early in retirement, the risk of not achieving sufficient returns is the major factor, as there is still a significant period of time over which to grow the assets. The threat from inflation is also at its highest early on for the same reason – it is a long period of time over which the uncertainty associated can manifest itself. Longevity risk starts out relatively small, due to the high probability of survival through the early years. However, this risk grows quickly as the individual ages, reflecting the fact that longevity is self-fulfilling, i.e. the probability of reaching age 90 is much higher for an 89-year-old than for a 60-year-old.

Figure 11: Sensitivity to longevity risk increases through retirement



Source: Schroders. For illustration only. February 2015.

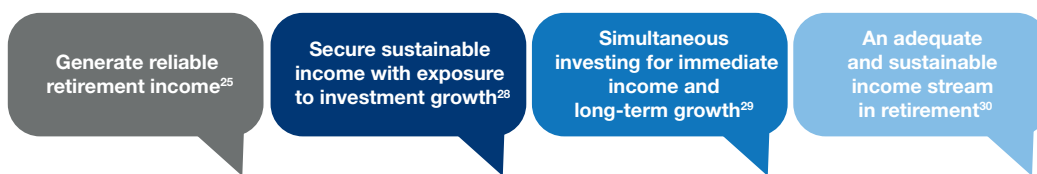
This insight can help us to focus our solution on the appropriate risk at each stage of retirement. When the account is largest, generating strong real investment returns with limited bad surprises will have the biggest impact. As the retiree ages, and withdraws pension income from the account, protecting against the risk of outliving his savings should be the main focus.

In addition to the relative importance of each of the risks, we should also consider the ability of a retiree to take risk. This is likely to be a function of the size of the overall retirement account and the ability of the retiree to deal with unexpected circumstances. If the retiree is mentally capable and has a large retirement account that is liquid, he will be more able to cope with sudden illness requiring medical care or a problem with his housing or car for example. However, as he gets older, he is also more likely to suffer from dementia (1 in 6 aged 80 and over have dementia in the UK²⁷, in the US half the population between 80 and 89 either has dementia or a medical diagnosis of ‘cognitive impairment without dementia’¹⁹). This means that he is less likely to be able to make a decision regarding his future investments. For this reason, we suggest that decisions regarding longevity protection from say, age 80 or 85, should be made earlier in retirement, even though these issues may not seem important at that time.

3.3 What individuals really need – identifying the criteria

In our research we have found a number of statements regarding what retirees need. These focus on the stream of income and its reliability throughout retirement:

Figure 12: Four statements that explain what retirees need



Source: See footnotes for each item.

It is clear from these statements and from our own research, that predictability in income and ability to grow the portfolio are important features of retirement provision. In order to achieve these goals and mitigate the risks highlighted earlier, a post-retirement solution will need to provide the following:

- Longevity protection – to protect against living significantly longer than expected
- Protected capital growth – to provide growth, yet also manage the risk of significant reductions in capital value when the assets are at their largest
- Inflation protection – for both general increases and spikes in inflation.

As we have seen, the significance of each criterion changes depending on the age and needs of the retiree, so the solution demands a level of flexibility.

3.4 What individuals want – the ‘wish list’

In The Australian Government’s review of retirement product³¹, the discussion paper outlined some of the criteria that Australians value in their post-retirement products:

- Flexibility
 - control over capital including ability to access it at any time
 - discretion over the drawdown rate
 - ability to select risk/return profile of investments
- Legacy value – transfer balance to dependants on death
- Familiarity – consistency with pre-retirement products
- Transparency – pricing of products
- Reliability – ring-fenced assets in an individual’s name.

²⁷ http://www.alzheimers.org.uk/site/scripts/documents_info.php?documentID=535&pageNumber=2
The Alzheimer’s Society, 2014.

²⁸ Viewpoint – the Decumulation Agenda – Ernst & Young Global Asset Management Center 2013.

²⁹ Corolab, issue 13 – The Income and Growth Challenge, Coronation Fund Managers (South Africa)..

³⁰ Meeting the retirement income challenge, Mercers, April 2013.

³¹ Review of retirement income stream regulation, Australian Government, July 2014.

As we highlighted in section 2, Americans, like Australians, do not currently make heavy use of annuity products for post-retirement income provision; perhaps a number of these factors would also resonate with plan sponsors and retirees in the US.

Interestingly, health care costs do not feature highly on the list of concerns in Australia and this is in stark contrast to Americans. The Australian health system uses a partly subsidised model that includes free access to general practitioners and hospitals, funded through a levy on personal income. There are also rebates and subsidies available outside of these core services that significantly decrease the net cost to individuals. Many Australians have private medical insurance but, unlike Americans, this is not their sole source of funding for primary care.

As the populations of both nations are aging, there have been several investigations into long-term healthcare and the ways in which this is funded. The needs are significant as the US government estimates that 70% of people over age 65 can expect to need some form of long-term care in retirement³². Insurance products for long-term care are available in some countries with the US being the largest market, ahead of France. The American offering provides reimbursements for approved expenses whereas the French system is a fixed cash benefit system to supplement income. There have been proposals to introduce this insurance to Australia but there is some scepticism over how widely it will be used.

Other 'wish list' factors^{30,33} for post-retirement products include:

- Value for money/low fees
- Stability of income
- Easy to understand
- Tax efficiency
- Cognisance of market valuation levels.

Value for money here can relate to overall fees and expenses but can also relate to how much an individual's retirement account will buy at retirement. For example, when bond yields are low, the value of the monthly annuity amount will be considerably less than when bond yields are high.

3.5 The difference between need and want in post-retirement

There is a stark contrast between the criteria in the needs and wants lists. Why is this? The difference between need and want is a basic economic concept; a need is something that an individual must have, a want is something that an individual would like to have but it is not absolutely necessary.

In post-retirement, individuals have some difficult decisions to make – they have to decide how best to make their assets last for an unspecified, but probably long, period. They do not know what return they will get from their assets, what they will need to buy, how inflation will impact the cost of the things they will need to buy, whether they will get sick and need long term care, or for how long they will live. There have been many studies showing that the human brain is not well equipped to deal with uncertainty. The most famous recent work on this is by the Nobel prize winner Dr Daniel Kahneman³⁴ who shows that humans often make errors even with relatively simple statistical calculations and so simple 'rules-of-thumb' (or heuristics) are created to deal with this uncertainty. Another psychologist, Gerd Gigerenzer³⁵, argues that individuals need to have an 'adaptive toolbox' and then these type of heuristics can be used to make more accurate decisions. The quality of these heuristics makes a big difference to the outcome experienced.

Let us consider, for example, the US post-retirement rule-of-thumb 'The 4 Percent Rule' for withdrawal levels in retirement. This sounds reasonable; it doesn't sound too high or too low and therefore some may regard it as a suitable heuristic. However, recent research³⁶ has shown that this is likely to be inappropriate when bond yields are low because the assets (if invested heavily in bonds) will not deliver anywhere near this level of yield. A better heuristic might be 'If inflation is higher than Y and bond yields are lower than X, I can only draw Z% p.a. from my portfolio' (see Figure 13).

³² <http://longtermcare.gov/the-basics/who-needs-care>. U.S. Department of Health and Human Services.

³³ Schrodgers.

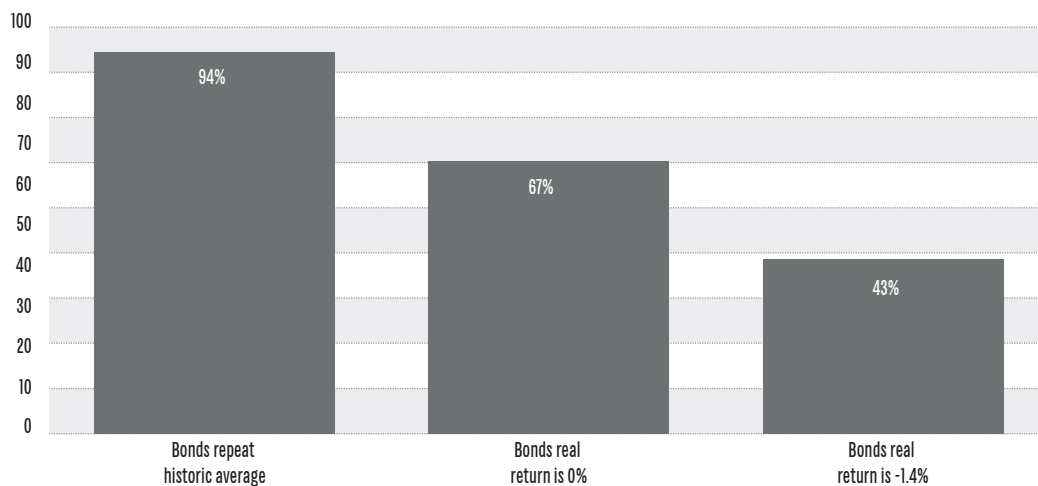
³⁴ Thinking, Fast and Slow, Daniel Kahneman, 2011.

³⁵ Risk savvy, Gerd Gigerenzer, April 2014.

³⁶ The 4 percent Rule is not safe in a Low-Yield World, Finke, Pfau, Blanchett, January 15, 2013.

Figure 13: Probability of success for draw down is significantly reduced in a low-yield environment

Probability of being able to draw an initial 4% income for 30 years without exhausting savings



Income drawn each year is 4% of savings at retirement, increased in line with inflation over 30 years. Based on a balanced portfolio containing 50% allocations to both equities and bonds. Forecast for bonds real return is taken from the source paper, reflecting the findings of their research and is not a Schroders forecast. Source: The 4 percent Rule is not safe in a Low-Yield World, Finke, Pfau, Blanchett, January 15, 2013.

Given the high level of uncertainty in post-retirement, we have some options:

1. Help individuals by providing some 'smarter' heuristics about what to invest in, how much to withdraw and when their money is likely to run out, and/or
2. Develop principles to which post-retirement options should adhere, making these options suitable for most people (but unlikely to be suitable for all, as is the case with pre-retirement defaults).

In relation to point 1, we have analysed different investment approaches and drawdown amounts, overlaid with how long people are expected to live to develop some smarter heuristics. Later in this paper we will discuss principles for a successful post-retirement solution.

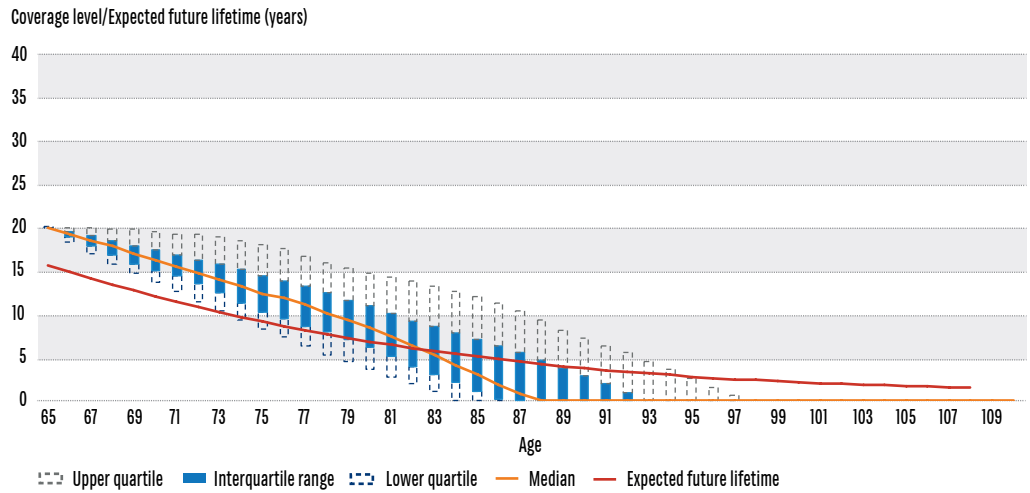
3.6 When will the money run out? Developing smart heuristics

The uncertainty involved in post-retirement spending needs is so great that any rules-of-thumb should be taken with a sizeable pinch of salt. In the following analysis, we track the 'coverage' levels expected through retirement. This ratio divides the available account by the most recent annual pension withdrawn, to get an approximation of the number of years' income remaining in the account. We have compared this to the expected future lifetime at each age. With each additional year of life, the expected time remaining reduces by less than one year. For example, a 65-year-old man can expect to live for around 17 years, to age 82. An 80-year-old man has, on average, around 8 years remaining, taking him to 88.

By examining the difference between the coverage ratio and expected future lifetime, we can look at the sufficiency of account-based retirement strategies for a variety of investment strategies. In our examples, we have started with a retirement account of around 12x final salary, and a replacement ratio of around 60%, as per the typical target levels in section 1. This gives a starting coverage level of 20x. We appreciate that this level of savings is relatively high compared to typical account balances at the present time. As DC systems mature, we expect this savings gap should narrow. As mentioned in Section 1, the issue of savings sufficiency at point of retirement can only be dealt with in the accumulation stage. See our earlier papers on pre-retirement DC systems for more information⁹.

The following charts compare the coverage ratio (range indicated by the blue bars and the orange line showing the median outcome) and expected lifetime (the red line). Where the coverage range median falls below the expected lifetime line we can think of this as the tipping point after which the odds of running out of money are against the retiree. In Figure 14 we see that, on this basis, cash alone is likely to be insufficient. After the median reaches the tipping point at age 81, the account is likely to be depleted after a only a further 6 to 7 years. The result is the portfolio provides hardly any protection against the risk of living even slightly longer than expected.

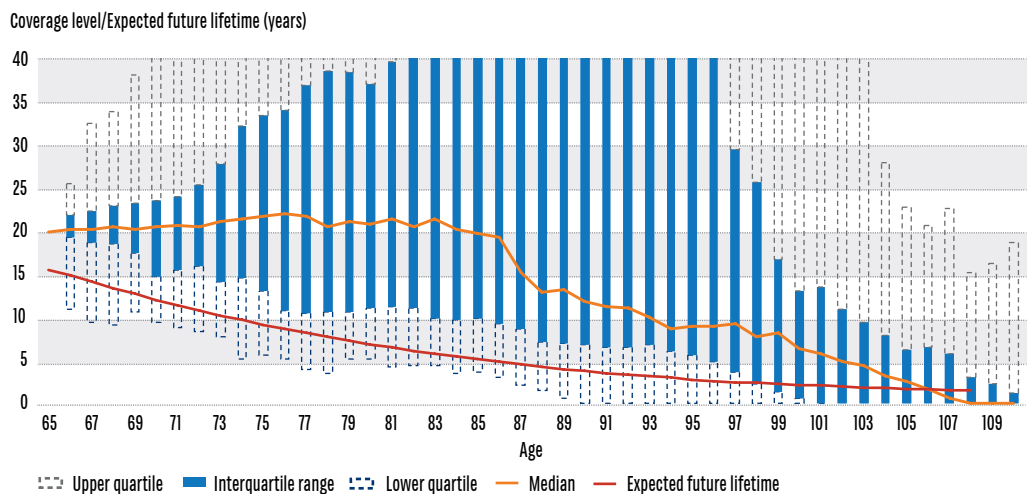
Figure 14: cash alone is insufficient



Source: Schroders, Thomson Datastream. February 2015. For illustration only. See appendices for assumptions used.

Figure 15 assumes the account is fully invested in equity markets, and shows the variability in outcomes, by the height of the blue bars. This study uses actual market data from the past 60 years as a basis, a period when equity markets have generally performed well over medium-long terms but also includes some severe market crashes. Although the intersection tipping point is far later than with cash, the impact of sequencing risk is shown in the lower tail of the ranges in the early years after retirement. Investing is path-dependent and it would be psychologically difficult to continue to pursue the full equity strategy having had a significant shock in those early years of retirement.

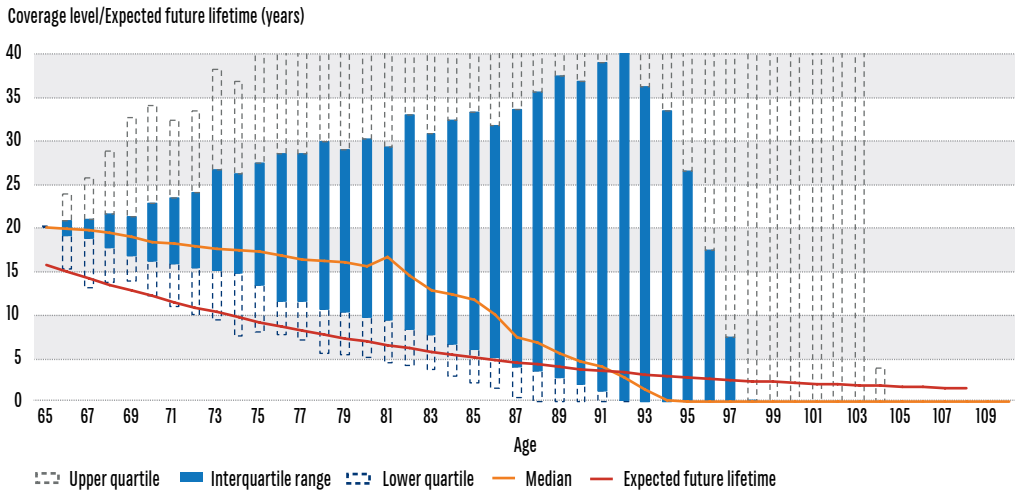
Figure 15: A pure equity portfolio takes significant short-term risk



Source: Schroders, Thomson Datastream. February 2015. For illustration only. See appendices for assumptions used.

Figure 16 shows the impact of a more balanced investment strategy, in this case a 50/50 equity/bond mix. Both non-cash strategies have significant upside potential to reward the additional downside risk. Tolerances for this will vary between individuals, and we suggest that the more balanced portfolio gives a more comfortable set of potential results, when looking at the coverage ratio.

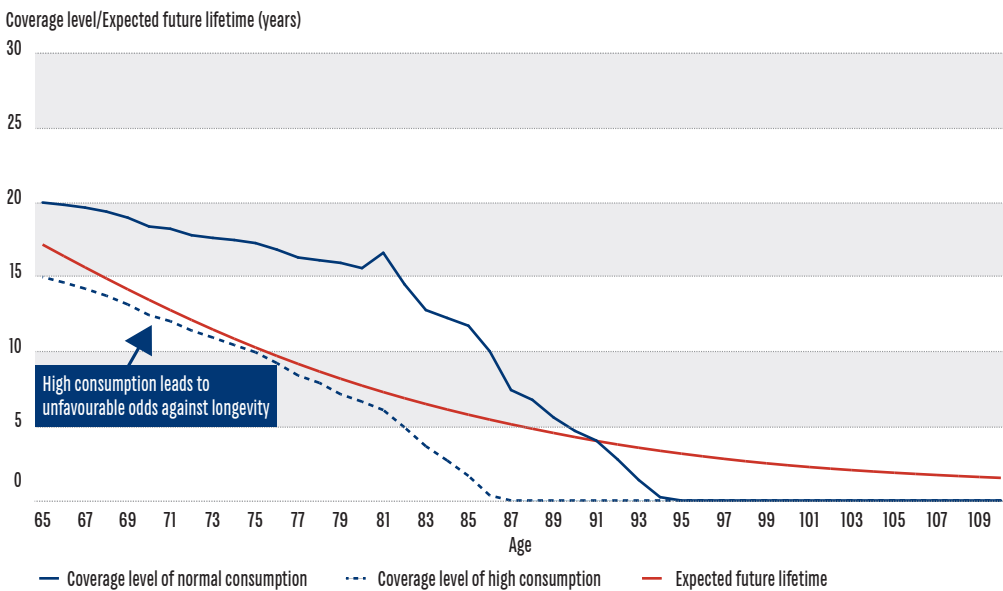
Figure 16: A more balanced portfolio reduces the tail risks



Source: Schroders, Thomson Datastream. February 2015. For illustration only. See appendices for assumptions used.

Investment strategy is not the only variable involved. In Figures 17 to 19, we show the impact on the coverage-versus-lifetime countdowns of a) taking a replacement ratio of 80% instead of 60%, b) being significantly healthier than expected, and c) retiring at age 55 rather than 65.

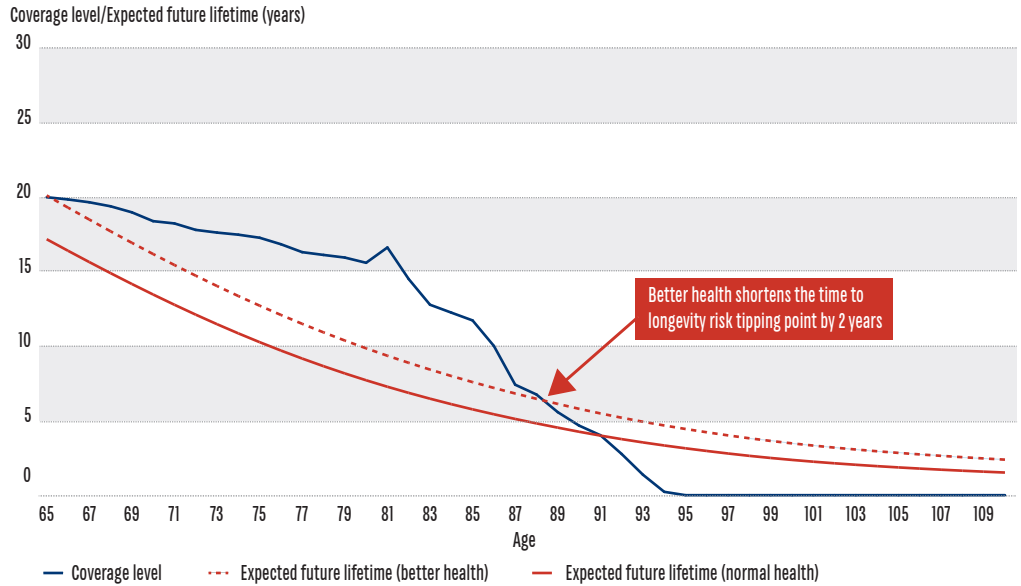
Figure 17: A higher consumption strategy leads to ruin a lot earlier



Source: Schroders, Thomson Datastream. February 2015. For illustration only. See appendices for assumptions used.

In this case, increasing the regular withdrawals has the effect of reducing the starting coverage level from 20x to 15x. In some cases, exceptionally strong investment performance can make up the balance, but the median coverage levels are consistently below the expected future lifetime. The odds are tilted in favour of the portfolio expiring before the member.

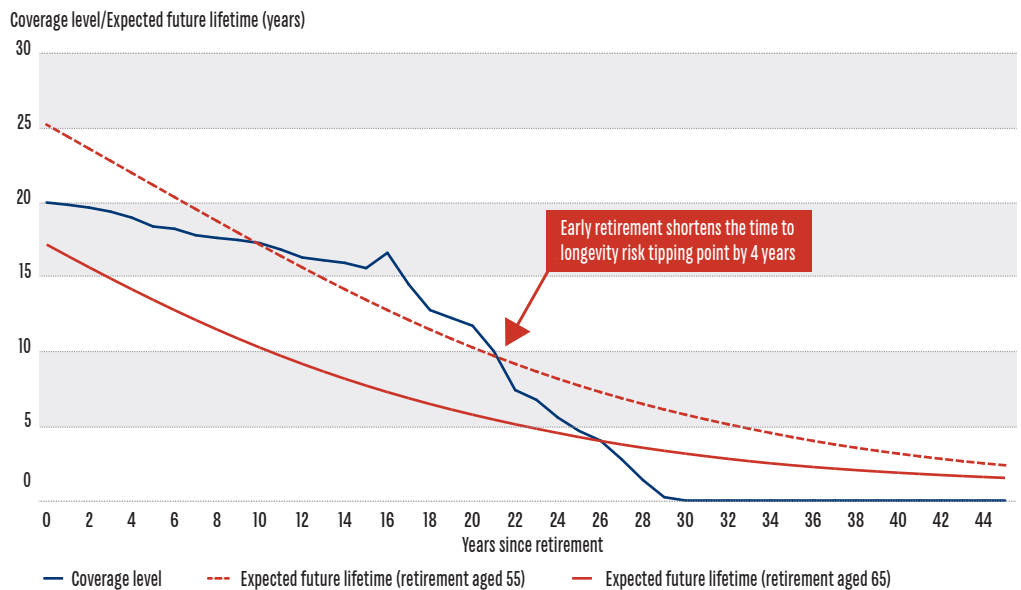
Figure 18: Being healthier is likely to lead to a longer (and more expensive) retirement



Source: Schroders, Thompson Datastream. February 2015. For illustration only.

In this case, the portfolio investment returns have not changed, but the expected future lifetime at each age is slightly higher. Since the retiree is healthier, there is a lower probability of death each year, and the intersection with the coverage ratio is therefore earlier in his lifetime.

Figure 19: Early retirement increases the chances of outliving your money significantly



Source: Schroders, Thompson Datastream. February 2015. For illustration only. See appendices for assumptions used.

This final example ignores the fact that, with 10 years' less savings, the individual is less likely to have saved 12x final salary. Still, the significantly lower mortality experienced by a 55-year-old, as compared to a 65-year-old, has a huge impact on the chances of running out of money before dying.

In our pre-retirement global lessons paper³, we highlighted that 'members need growth assets for as long as possible' because life expectancy is increasing and many have not saved enough to be investing so conservatively. As shown by figures 14-16, this continues to be true as people move into retirement, in order to improve the chances of their account lasting their lifetime.

Summary

We have identified the four key areas of uncertainty for those in post-retirement:

1. Longevity
2. Investment
3. Inflation
4. Consumption.

The risks are that these factors turn out to be different than expected. The relative importance of the first three factors changes over an individual's retirement with longevity moving from the least significant to the most significant factor by around age 80.

We also discussed numerous other risks, which although not as economically significant to individuals, often feature highly in individuals' minds e.g. liquidity/lack of flexibility risk and provider insolvency risk (specifically in relation to insurance products).

We identified the following criteria that individuals should use to judge an effective post-retirement product. We have split these into primary and secondary criteria. In our opinion the primary criteria are more important than the secondary criteria. It is also possible to think of primary criteria relating to 'need' and secondary criteria relating to 'want':

Primary criteria (needs)

1. Reliable protection against longevity risk
2. Stable, real investment returns, net of all fees and costs
 - a. Investments that provide long-term growth
 - b. Investments that do not exhibit significant losses, particularly when the account is at its largest
3. Inflation protection
 - a. Protection against rises in inflation of the goods and services required in retirement
 - b. Protection against spikes in inflation
4. Flexibility to adapt to changing requirements.

Secondary criteria (wants)

1. Predictability of income – this makes it easier for retirees to plan expenditure
2. Legacy benefits – the ability to leave any proceeds from retirement to dependants
3. Simplicity in implementation and communication of outcomes
4. Adequacy – relating to the rate at which the account can be converted into an income stream, this includes the impact of market valuations at the point of purchase.

We discuss these criteria in more detail in the following section. Clearly a number of these factors conflict with each other (e.g. predictability vs. flexibility) and it is difficult as a result to rank them in order of importance. As with many investment decisions for individuals, it is a balance of these factors that is most likely to be most effective.

4.

Models of post-retirement provision and how they stack up

There are essentially three models of post-retirement income provision, which can be delivered inside a DC plan or outside:

1. Cash lump sum invested in an instant-access bank account
2. Investment accounts that provide non-guaranteed income by making systematic withdrawals or from 'natural' income. This type can also include:
 - a. Post-retirement lifecycle/through retirement target date strategies/reverse target date funds (also called liquidation date funds)
 - b. Programmed withdrawal strategies and managed pay-out funds
3. Longevity protection, including lifetime annuities, deferred annuities and risk pooling.

In addition, there are hybrids and combinations of the above, which we will also discuss later in this section.

4.1 Cash lump sum

This is the simplest of the three options – retirees are handed a cash lump sum, generally tax-free, to use as they choose. This approach has the greatest flexibility for the individual; they can deposit the lump sum into their bank account, buy investment funds, purchase insurance protection or spend it on goods and services as they see fit. We showed in the previous section that, unless an individual has a very large retirement account and a predictable income need, bank deposits will likely be insufficient to meet lifetime requirements. Likewise, spending a significant proportion on consumption goods (e.g. holidays or luxury cars) will seriously endanger future income adequacy.

One of the most well-known markets providing this approach is Hong Kong. The system is simple at retirement. Having reached age 65, individuals are permitted to withdraw their accrued benefits in a lump sum. They are also permitted to take early retirement from age 60 and withdraw their accrued benefits provided that they have declared to have permanently ceased employment or self-employment³⁷. Early withdrawal of a cash lump sum is also available for those that are 'totally incapacitated', those who permanently depart Hong Kong, by the dependants of members who die before retirement, and those with a small account balance.

A survey by BCT³⁸ found that once they had received their lump sum, retirees keep around 90% of their retirement assets in cash with only 10% in other investments.

4.2 Investment accounts

Also known in various markets as account-based pensions, IRAs, living annuities or programmed withdrawals, this category covers the widest range of options. We group them together as they aim to provide income without the lifetime guarantees associated with traditional insurance-based annuities.

In some countries this option requires that individuals draw down an agreed percentage a year, often between a minimum (to prevent retirees from 'hoarding' money) and maximum amount (to stop retirees from depleting their accounts too quickly). In other countries, there is more flexibility, with little or no requirement to take an agreed amount.

³⁷ www.mpfa.org.hk

³⁸ 2009 Retirement Life of Third Agers. BCT. December 2009.

In South Africa, as we discussed earlier, living ‘annuities’ are tax-protected phased-withdrawal products where drawdowns must be between 2.5% and 17.5% of the value of capital invested, per annum. The level and frequency of income can be typically reviewed annually. By defining the withdrawals in such a way, the individual will never completely run out of money, but clearly the nominal amounts available for withdrawal will decline if the account value falls (due to market movements and/or withdrawals).

In Chile, one of the options available is a programmed withdrawal from an individual account. A formula is used to calculate the amount that can be taken out each year based on the account size, prevailing interest rates, age, dependents etc. This is changed annually and is individually-based. Anecdotal evidence suggests that there is limited understanding of how the formula operates and individuals generally compare the offered annual income with that available from an immediate annuity, selecting the higher and repeating annually until the annuity wins.

In Australia, an account-based pension is started with a lump sum from a superannuation fund. This is usually done by transferring money from an accumulation account to an account-based pension account, after reaching the age at which sums can be withdrawn (called the ‘preservation age’ in Australia). A minimum amount has to be withdrawn each year based on the age of the individual (ranging from 4% at age 55 to 14% at age 95+). There is also a maximum of 10% each year in the transition period (i.e. before age 65). Income payments can be made monthly, quarterly, half-yearly or annually and cash lump sums can be taken. It is also possible to roll back into a super accumulation account³⁹.

In the US from age 59½ and before the age of 70½, individuals are required to start taking withdrawals (called Required Minimum Distributions or RMDs) from most retirement accounts (or pay a large tax penalty if RMDs are not started until after 70½). There is a small exception to this rule – if the individual is still working at age 70½ distributions can be delayed until the following year. Online RMD calculators exist to help individuals work out how much to withdraw. These calculators typically apply a life expectancy factor taken from a standard life table and require individuals to estimate how much they expect to generate in returns from the balance left each year in the account. The calculators are fairly basic and regulations exist about what information should be used to calculate the RMD.

4.3 Longevity protection

Whole-life annuities are insurance products that guarantee to pay a specified regular income for as long as the annuity-holder remains alive. Open-market prices can vary significantly, with the key factors being interest rates and mortality expectations. At times with low interest rates and improving mortality data, for example, annuities will be relatively more expensive.

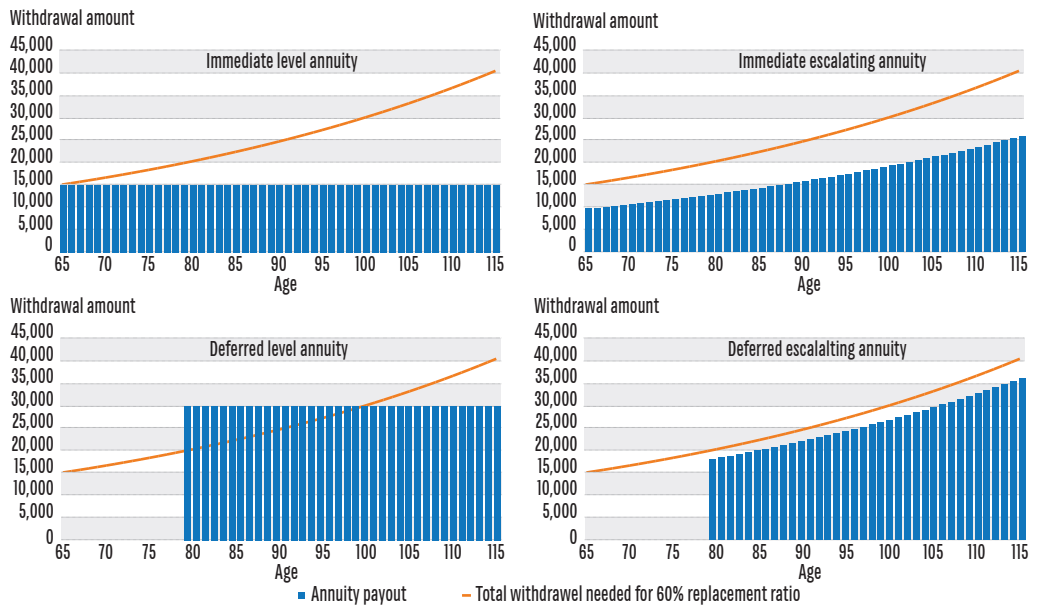
There are two main types of annuity: immediate (meaning that it is purchased and it starts to pay out immediately) and deferred (meaning that it is purchased in advance of an agreed date when it will start to pay out). Both offer longevity insurance once they are in payment (i.e. they last for life) but often deferred annuities do not pay out if someone dies before they reach the agreed age. For this reason, deferred annuities are often packaged with a term assurance contract to pay out some value in case of death before the payment start date.

Annuities can be fixed, meaning that the regular payment amounts are static in nominal terms, or variable, in which payments vary in line with an index or underlying investment fund. Most commonly, variable annuities are linked to an inflation index, and so the purchasing power of the income remains stable over time.

Figure 20 shows the pay-out profiles from the different types of annuity, using approximate rates as at the time of writing. As in previous examples, we have assumed the individual has saved 12x final salary and wants a replacement ratio of 60%, increasing in line with inflation.

³⁹ Australian Securities and Investments Commission MoneySmart website.

Figure 20: Pay-out profiles from different types of annuity



Source: Schroders, Thompson Datastream. February 2015. For illustration only.

Additional features can be bought with annuities including partner/ dependants' benefits, a guaranteed minimum benefit, a guaranteed period (benefits paid if death occurs within this period), protection from market fluctuations, increases in line with inflation, a floor beyond which losses will not impact the annuity value.

In addition to products provided by insurance companies, in some countries collective sharing vehicles exist (e.g. Singapore, Netherlands). These seek to provide a type of longevity insurance by pooling the risks with other individuals. These do not provide strict guarantees, and if members of the pool all live longer than expected, the amounts will be reduced. Providers in Australia have also launched similar longevity risk pooling products at a lower fee than insurers, apparently without the capital requirements normally applicable to insurance-based strategies.

The 'ultimate' way to provide longevity protection is by the State, as this pools the largest number of lives, spreads the individual risks most widely, and so gives more stability and predictability overall. For most States, however, the cost of this, in financial and political capital, is restrictive to the point of impossibility.

Annuities have most heavily been used by DC plans in the United Kingdom until changes were introduced in 2015. The vast majority of individuals reaching retirement were required to purchase annuities from insurance companies. A preferred provider was selected by the plan sponsor but individuals were encouraged to evaluate all the insurance providers using an Open Market Option. However, in reality, less than half of retirees (42%¹⁵) actually did this, resulting in individuals often buying annuities that were poor value in relation to the peers.

¹⁴ The Future of Retirement Income: Retirement income after the 2014 Budget. Which? July 2014.

¹⁵ Love Them or Loathe Them, Reverse Mortgages Have a Place, The New York Times, 26 September 2014.

4.4 Hybrid or combination options

It is possible (and very common) to create solutions that combine these three components in order to retain their advantages and reduce the disadvantages. Examples of hybrid strategies are:

- Systematic/agreed withdrawals for a fixed period and a deferred annuity. This aims to provide a non-guaranteed variable amount until assets run out (or death) and an annuity that would pay a fixed amount from, say, age 80 or 85
- Capital protected products including Guaranteed Minimum Withdrawal Benefits (GMWB) i.e. an annuity with an option to ensure that the original amount invested is the minimum amount that is paid out over the lifetime of the contract
- Annuity and/or GMWB to pay for fixed living costs and a managed pay-out fund to cover variable expenses. This would provide an amount guaranteed for life and access to capital from the managed pay-out fund should the individual need it
- Variable annuity products can provide a guaranteed income stream for life for a portion of the amount invested and also an increase (or decrease) in the capital amount through market movements.

While many of these hybrids provide more advantages than the single products outlined above, they also bring with them added complexity and often a lack of transparency in pricing.

Unsurprisingly, the recent Financial System Inquiry report in Australia recommended that a default post-retirement option (called a Comprehensive Income Product for Retirement or CIPR) should have multiple features including ‘regular and stable income stream, longevity risk management and flexibility’¹². The Which?⁴⁰ report in the UK also recommended that a product to be used in auto-enrolment should incorporate similar features (flexibility, reasonably reliable income stream, maintain purchasing power, include deferred longevity insurance etc.). In the US there has been little guidance regarding the design of a retirement income solution for a qualified retirement plan and this has caused some fiduciary risk concerns. However, a default does exist for qualified DC plans which specifies the Required Minimum Distribution that must be drawn at age 70½ – this has the features of being flexible and delaying income²⁴ but does not provide longevity protection or a stable income stream.

We agree that strategies incorporating the factors individuals need and value in post-retirement would make more sense for retirees than the single products currently used in most countries. The question remains about how and when the different component parts should be used to target these needs.

4.5 Reverse mortgages

Also known as home equity release and reversion/conversion programmes, these allow home owners to take a loan against the value of their house. It is typically paid back when the house is sold, no longer the principal residence (e.g. the owner has moved into a nursing home) or by the dependants when the individual dies. There are several different types with cash advances being available over a fixed term or for the period of life and this can also be combined with a lump sum payment in some countries. The amount owed on a reverse mortgage increases with interest and may use up all the equity in a home, but generally not more (a ‘nonrecourse’ clause). Demand for these types of loan has been growing in the US because older Americans’ homes are worth more on average than their other combined savings. However, there has been some controversy where “Some lenders are aggressively pitching loans to seniors who cannot afford the fees associated with them” or “Some widows are facing eviction after they say they were pressured to keep their name off the deed without being told that they could be left facing foreclosure after their husbands died”⁴². It is expected that the reverse mortgage market is likely to grow further as bond yields are low in the US and savings may not be enough to cover nursing home expenses.

⁴² A Risky Lifeline for the Elderly Is Costing Some Their Homes, The New York Times, 14 October 2012.

4.6 How do the options stack up against the primary and secondary criteria?

To evaluate how these three components stack up against the criteria we have outlined, we have grouped them into three categories:



















1. Cash lump sum invested in an instant-access bank account
2. Investment accounts/account-based pensions/IRAs/programmed withdrawals
3. Guaranteed insurance products/annuities.




4.7 Primary criteria (needs):

1. Longevity protection – The only one of the three options that provides longevity protection is an annuity. However, we note that in countries such as South Africa, where the average life expectancy is less than 60 years⁴³, it makes less sense to lock up an individual's retirement account into a strategy that provides longevity protection.
2. Stable real net returns
 - a. Investments that provide growth net of fees – cash clearly does not provide growth; annuities and investment accounts can provide growth. The most popular type of annuity purchased in post-retirement is generally fixed and does not provide growth. Escalating annuities provide inflation protection (see below) but not necessarily growth. Individual accounts can be invested in a wide variety of different asset classes, some more likely to provide growth than others.
 - b. Protect against risk of significant loss – very large losses near the start of retirement can seriously impair an individual's ability to live in the manner in which they had planned for a sustained period. Cash does not experience large losses in nominal terms. Fixed annuities are guaranteed to be fixed so also do not experience large losses once purchased. Index/market/stock-linked annuities and individual accounts that invest high proportions in equities are more likely to suffer from large losses than those that do not.
3. Inflation protection
 - a. Increases in the costs of goods and services needed in retirement – cash and fixed annuities do not provide protection against this. Inflation-linked annuities guarantee inflation protection. Individual accounts that invest heavily in growth assets may provide inflation protection over the longer term but as we outlined in our paper 'Investment Perspectives: What are the inflation beating asset classes?', it will require both a combination of different growth assets and dynamic management targeting an inflation related return to be able to potentially deliver this requirement. We also examined in our paper 'Investment Perspectives: Outcome-oriented investing – Translating real world targets into investment objectives' how achievable this target was in different market environments.
 - b. Shock increases in inflation – cash and fixed annuities also do not provide this. Index-linked annuities do provide this type of protection but it is often lagged. It is theoretically possible to have an individual account managed in a wide variety of asset classes that dynamically moves between the different assets at different points in the inflation cycle but most are unprepared for shocks to inflation.
4. Flexibility – the ability to access assets to manage unexpected increases in consumption (not related to inflation). Cash in hand provides the greatest flexibility in terms of meeting unanticipated spending needs (provided there is enough money in the bank to meet that need!). With some account-based pensions systems, there is flexibility to increase the withdrawal amounts or access lump sums, sometimes on a means-tested basis. The traditional annuity market offers little flexibility, by its very definition. Contracts may have surrender values, but these tend to be punitive.

⁴³ The World Bank databank, January 2015

Figure 21: How do the typical components fare on our primary criteria?

Primary Criteria	1. Longevity protection	2a. Growth net of fees	2b. Protect against significant loss	3a. Inflation protection (increases in costs)	3b. Inflation protection (inflation spikes)	4. Flexibility
Cash lump sum						
Individual accounts						
Fixed annuities						

 Likely to satisfy
  Unlikely to satisfy
  Mixtures depend on product, investments and market environment

Source: Schroders. For illustration only.













4.8 Secondary criteria (wants):




1. Predictability of income – fixed annuities, index-linked annuities and cash provide the most predictable income. Market-linked annuities and individual accounts are less predictable as their ability to make payments is dependent on the underlying assets.
2. Legacy benefits – cash and individual accounts offer good legacy benefits in case the retiree dies soon after starting to draw benefits. Annuities are generally the least attractive from this perspective unless spouse/dependant terms have been included in the contract. Even if this is the case, the benefit to the spouse is likely to be less than for the primary contract holder.
3. Simplicity – as discussed earlier, it is sometimes difficult to know what is going on inside an annuity. The fees are also less clear. Individual accounts in general are fairly transparent regarding the investments, especially in more regulated markets.
4. Adequacy – this relates to the amount that can be bought. Cash will appear poor on this measure as cash rates are extremely low/non-existent in many countries in instant-access bank accounts. There are points in time when annuities look poor value for money due to low bond rates and there are times when equities within individual accounts seem expensive relative to history. At other times both of these can look attractive.

When we compare the products against the primary criteria (Figure 21), we can see that cash lump sums are the weakest when judged against these criteria and that individual accounts, depending on the product underlying these accounts, scored the strongest. It is also helpful to note that annuities can be regarded as complementary to individual accounts and so it is possible to envision combining these into a solution to get the best of both for individuals. Recall that we believe that these criteria are something that individuals ‘need’ in post-retirement products, whereas the secondary criteria are more skewed to what individuals ‘want’.

When we look at the secondary criteria (Figure 22), the picture is more mixed. A lump sum payment appears to be the most attractive by these measures.

Figure 22: A different story on the secondary criteria

Secondary Criteria	1. Predictability of income	2. Legacy benefits	3. Simplicity	4. Sufficiency
Cash lump sum				
Individual accounts				
Fixed annuities				

 Likely to satisfy
  Unlikely to satisfy
  Mixtures depend on product, investments and market environment

Source: Schroders. For illustration only

It can be difficult to ascertain whether annuities offer good value for money in terms of expenses as the pricing mechanism lacks transparency, although if insurers were making ‘super-normal’ profits, this would arguably attract new entrants. Some widely-quoted analysis puts the cost of providing longevity insurance at around 22%⁴⁴ compared to mutually insuring within a group of individuals (although this number has been widely debated as an overestimate). A report⁴⁰ in the UK highlighted the issues that the Financial Conduct Authority (FCA) has with judging value for money in annuity pricing: “Insurers do need to build in a prudent mortality buffer into their pricing models, given that they are writing annuities for individuals who might live for 30 years or more. However, the mortality buffer is only part of the load that insurers add to the modelled annuity price to cover items such as administration and profit. The question that needs to be answered is this: ‘is the profit margin built into the annuity price excessive in relation to the capital the insurer needs to allocate to support its annuity business?’” The FCA is likely to be looking into this as part of its competition investigation in the UK.

When we look at the amount that can be purchased with a lump sum, this obviously depends on the type of the annuity (fixed offer higher amounts at the start than inflation-linked) and the market environment. A lot of press in the UK particularly has highlighted the very low monthly amounts available. The median DC account size for those aged 55-64 is around £25,000⁴⁵ and at the time of writing, this will buy around £83 per month or £1,000 p.a. of pension (based on a single life, no guarantee period, no impairment to life, no increases, maximum tax-free lump sum of 25%)⁴⁶ but this reflects the low bond rates in the market.

Individual account fees and expenses are generally more transparent, although this does differ from country to country. Equities and other growth assets typically attract higher fees than bonds and cash, with active management having higher fees than passive management for the expectation that skilled active managers will deliver a return above the passive managers. Increasingly we are seeing pressure on fees within pre-retirement DC but this is less obvious in post-retirement DC, which is dominated by retail arrangements. However, we do expect this to change as regulators and the asset management/insurance industry in the more mature DC markets start to address some of these issues. We also observe that in some countries ‘smart beta’ type approaches are starting to be used in pre-retirement to try to enhance returns for individuals but at a lower fee than active management. In summary, the individual accounts that have high allocations to growth assets are likely to have the highest fees among the three options.

From a political angle, the ‘crowd pleaser’ is the cash lump sum as it ticks more of the secondary/‘want’ criteria but this provides little to individuals in terms of sustainability and meeting inflation-related costs in old age.

⁴⁴ Collective Pensions in the UK – David Pitt-Watson, Hari Mann, July 2012.

⁴⁵ Private pension wealth among 55-64 year olds in the UK, based on 2008/2010 data, Dr Paul Cox, NEST Pensions.

⁴⁶ www.Moneyadviceservice.org.uk as at 31 March 2015.

4.9 How do countries stack up against the primary criteria?

In the appendix we have provided profiles on eight countries. We have analysed each of these against the primary criteria in Figure 23.

Figure 23: No market satisfies all the criteria

Primary Criteria	1. Longevity protection	2a. Long-term Growth (net of fees)	2b. Protect against significant loss	3a. Inflation protection (general price rises)	3b. Inflation protection (inflation spikes)	4. Flexibility
Australia (individual accounts)	✗	?	? <small>Depends on product</small>	?	? <small>Depends on product</small>	✓
Chile (programmed withdrawal)	✗	?	?	?	✗	? <small>can change amount</small>
Netherlands (CDC)	✓	✗	?	?	✗	✗
Singapore (compulsory fixed 'annuity')	✓	✗	✓	✗	✗	✗
South Africa (living annuity)	✗	?	✗	?	✗	? <small>can change amount</small>
Sweden (variable annuity)	✓	✓	✗	?	?	✗
UK pre-2015 (compulsory fixed annuity)	✓	✗	✓	✗	✗	✗
UK post-2015 (individual accounts)	✗	?	? <small>Depends on product</small>	?	? <small>Depends on product</small>	✓
United States (individual accounts)	✗	?	? <small>Depends on product</small>	?	? <small>Depends on product</small>	✓

Source: Schroders. For illustration only.

As can be seen, none of the systems is able to tick all of the boxes. Systems that are primarily based on annuities/longevity protection do not often have growth and ones that offer the flexibility of investing in growth assets through individual accounts do not offer longevity protection.

In systems where there is a choice for retirees, we have focused on the most popular option in this analysis. The choice, if structured well and communicated clearly, can have real value. For example, in Chile, retirees can choose between an annuity and a programmed withdrawal account – by considering their own circumstances and the prevailing market environment, the tools are arguably provided to meet all of the needs. However, this is at the expense of simplicity and only a relatively small proportion of retirees can make active decisions with these criteria in mind.

Summary

In all major DC markets, the post-retirement strategies comprise three basic components: lump sum, account-based withdrawals and annuitisation. By assessing first how the components stack up against the established requirements and then how selected markets' systems fare, we identified a shortfall in the current provision. This is not unexpected – since very few markets are mature enough yet for DC savings to be a significant proportion of a typical individual's total retirement benefits, limited attention has been paid to the issue so far. However, this is all changing, as the legacy from DB-to-DC switches in the 1990s and 2000s begins to impact new retirees; post-retirement strategies are increasingly at the forefront of individual, political and commercial minds.

We believe that the next step will be well-designed retirement strategies that adhere to a set of principles, the focus of the next section of this paper.

5.

Principles for a successful post-retirement solution

The ideal solution is more than just an investment portfolio. It has to be an overall strategy for meeting retirees needs and, just as there is an accepted role for default arrangements in pre-retirement, it is time to install sensible principles for post-retirement.

In the accumulation stage, default arrangements typically mean a minimum contribution level and a specified investment strategy. When individuals are auto-enrolled into the plan and do not engage to make an investment decision, their contributions are allocated to this default strategy, typically selected by the plan sponsor to give exposure to a balanced investment portfolio creating long-term real returns.

These default strategies tend to be widely used, either because people do not engage or because they accept it as a good 'recommendation' from the plan sponsor. Greater active involvement should be expected from individuals at the point of retirement, and so perhaps a post-retirement strategy has more of a guidance role or a 'nudge' in the right direction rather than as protection for the unengaged. Bearing in mind the key risks we have outlined earlier, it should manage individuals' exposures to the key risks, as well as overcoming the behavioural problems of under-investing or over-spending.

As in pre-retirement, absolute compulsion to follow a certain route in post-retirement is not needed. Many people will be willing and able to choose their own path, in terms of investment strategy, income to target and use of insurance products.

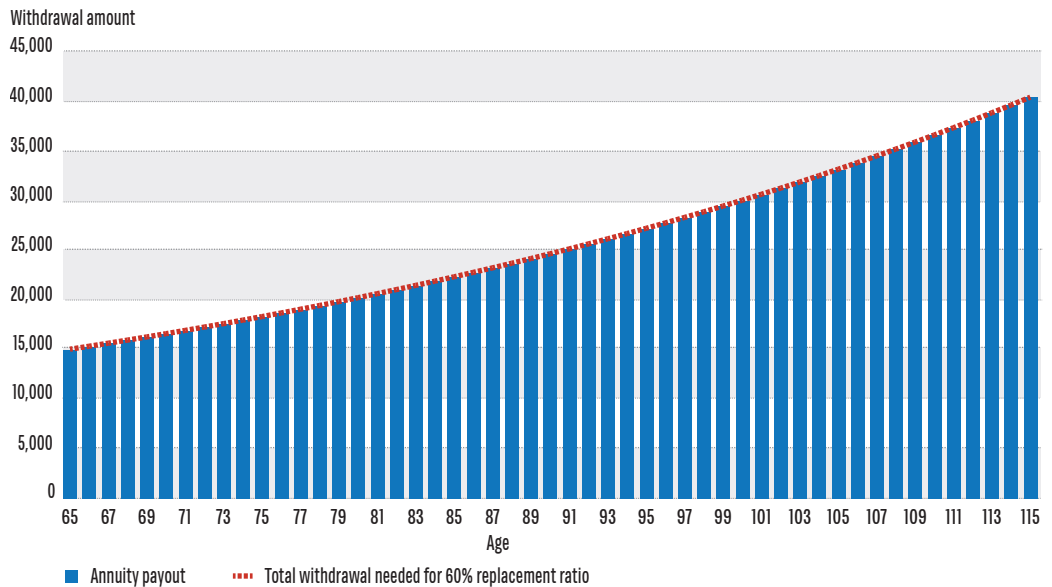
5.1 What are the features of a successful post-retirement solution?

In our opinion, if we want to do the best for individuals, the ideal post-retirement solution should have as many 'green lights' in the primary criteria box as possible. By focussing first on meeting the 'needs' of retirees, rather than the popular, comfort-giving 'wants', this follows the same thinking as pre-retirement defaults: providing the most suitable route for the unengaged or the unsure.

As we discussed, no single product achieves these criteria, so a combination of components is required. Since the impact from the various risks changes as the retiree ages, the solution should focus on maximising risk-controlled growth opportunities in the early stages before adjusting to protect against longevity risk later on. This approach can result in retirees still having a choice at retirement both in relation to the type of investments and the type of longevity protection provided. Solutions could be 'approved' as meeting a set of specific 'needs' criteria.

Using our earlier starting assumptions of an individual at the point of retirement who has saved 12x final salary and aims for a 60% replacement ratio, escalating in line with inflation, the textbook strategy would be to buy an immediate escalating annuity to meet these income needs exactly.

Figure 24: If annuities were affordable...



Source: Schroders, for illustration only, see Appendix for assumptions.

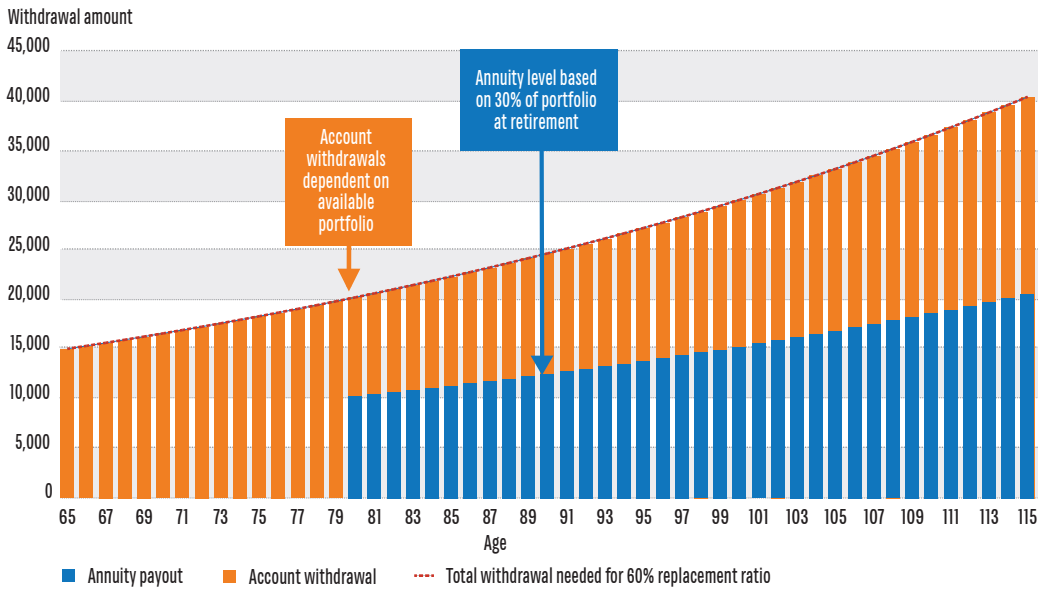
This would require the annuity to be priced at 5%, i.e. the first payment is 5% of the purchase amount (5% of 12x salary equals 60% of salary, as per the targets outlined above). However, the current prices of immediate escalating annuities are much more expensive than this in many countries, due to low interest rates and improving longevity. In addition, with an annuity of this type, there is very little flexibility, making it difficult to deal with changing needs later in life.

Given what we know about the changing risks with age, we can look at 3 other options:

- Account-based income and deferred annuity
- Account-based income and buy annuity later
- Account-based income and immediate annuity.

Taking a closer look at these three ideas, the first involves splitting the account at the point of retirement into a lump sum for investment and buying a deferred annuity with the remainder. In the example below, 30% of the account was spent on the annuity, which would begin to pay out on the retiree's 80th birthday. In our opinion, the age chosen for the deferred annuity to start should be around 80 to 85, as this is when longevity risk starts to dominate the other risks as we showed earlier. The rates for deferred annuities are cheaper than immediate annuities since there is a delay (15 years in our example) before the first payment, during which time returns will compound up and some of the retirees will die. From the insurance company's point of view, this allows greater investment freedom to pursue higher returns and experience gains from mortality risk pooling if they have priced the risks correctly.

Figure 25: Account-based income and deferred annuity

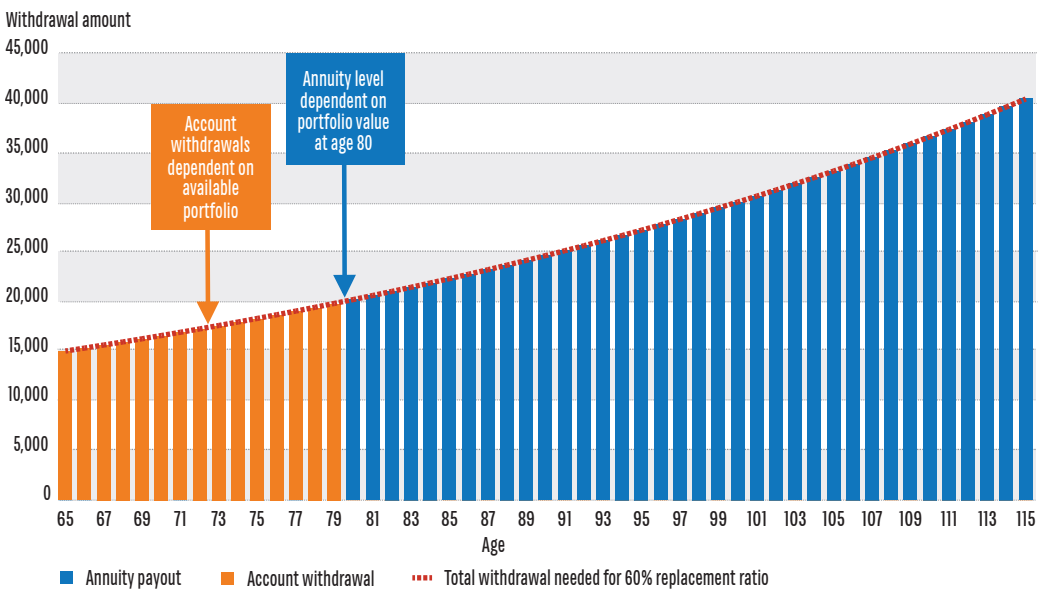


Source: Schroders, for illustration only, see Appendix for assumptions.

In this strategy, the risk is of the account-based element running out at some point. It is used to fund the first 15 years' pension payments and then to 'top-up' the annuity pay-out to the desired income level (60% replacement ratio) thereafter. The aggressiveness of the investment strategy and the prevailing market environment will dictate the timing of this eventual depletion of funds. In our backtest analysis, using a balanced portfolio of 50% bonds and 50% equities, and actual historic market data, the median expiry age of the account is around 89 years.

The second strategy delays the purchase of the annuity. The whole account at retirement is invested and the required 60% replacement rate income is withdrawn over the first 15 years, then the balance remaining is used to purchase an immediate annuity. Since the retiree is then 80 years old, as opposed to 65, the available annuity rates would be more favourable. From the insurer's point of view, there will be fewer pay-outs due to the lower expected future life expectancy. (Using standard mortality tables, a 65-year-old can expect to live for around a further 17 years, whereas an 80-year-old typically has just over 7 years left.)

Figure 26: Delayed annuity purchase

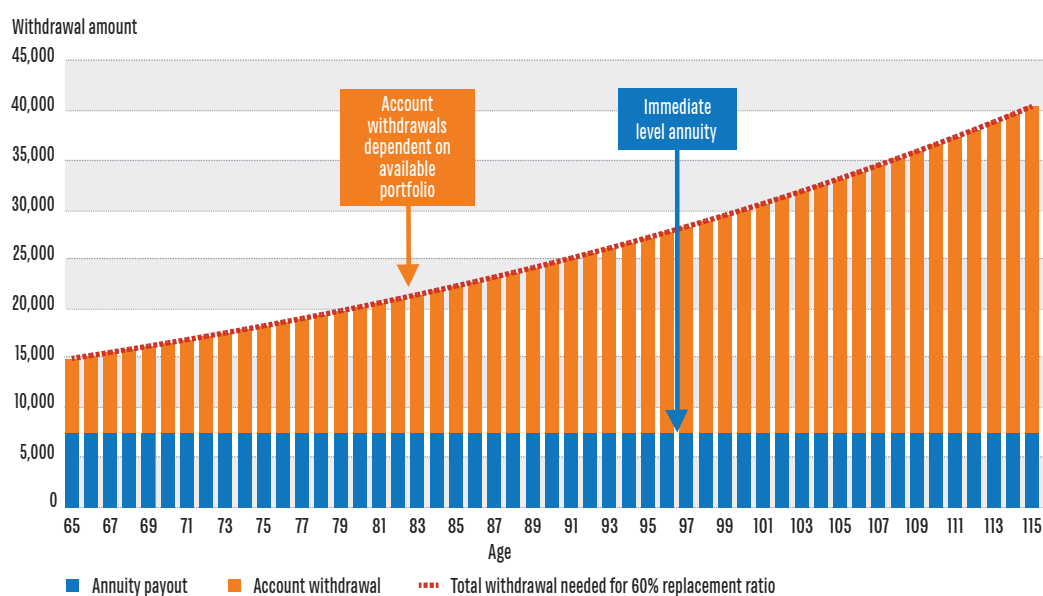


Source: Schroders. For illustration only, see Appendix for assumptions.

There are risks involved in this regarding the future annuity rates available 15 years after retirement. Economic and demographic conditions may have changed significantly by then, impacting annuity prices. Also, if the investment returns achieved in the first 15 years are lower than anticipated, the balance available at age 80 may be insufficient to buy an adequate annuity. Our real-life backtest shows that at age 80, the median remaining account value could afford an annuity of around 82% of the target level of continuing the 60% replacement rate.

The third strategy is to combine account-based and annuity components together from the very start of retirement, essentially buying an annuity to cover a very basic income level and using the account to top this up to the required level. The annuity, in this case, could be level or escalating in line with inflation. This is similar to how State benefits dovetail with personal/corporate benefits in many markets. In Figure 27 we show it as a level annuity, and therefore the top-up withdrawals taken from the remaining account will increase over time. The initial decision regarding what proportion of the savings to annuitise will likely be taken based on the available rates and what the retiree wants/needs as the basic income level (and how much is provided separately by the State, if any).

Figure 27: Combined strategy from outset



Source: Schroders, for illustration only, see Appendix for assumptions.

Depending on the investment strategy for the account and the market environment, there may come a point in time when the account runs out and the available income reverts back to the basic annuity level only. In reality, in around half of backtest scenarios the account survives past age 90, although in 30% of cases, it has expired by age 85.

When we evaluate our preferred strategy (account-based income and deferred annuity) against the primary and secondary criteria, we see that this strategy meets more of the needs and wants that individuals have in post retirement (see Figures 28 and 29).

Figure 28: blended solutions meet more of the needs of individuals in post-retirement

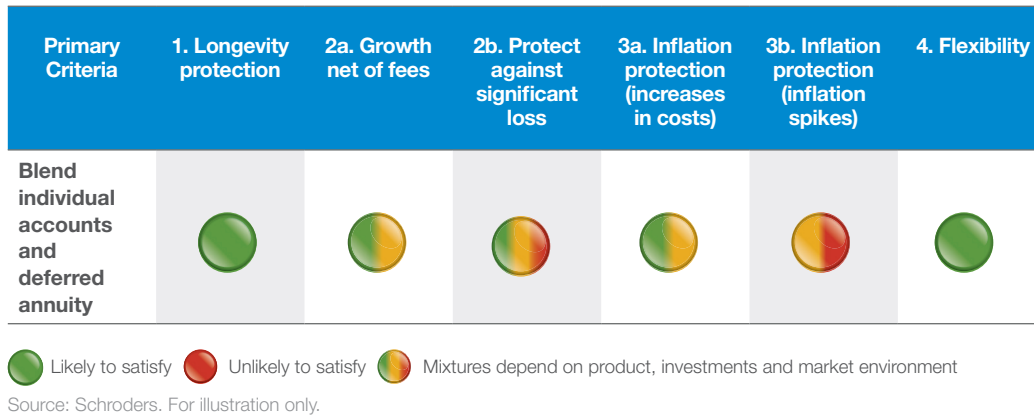
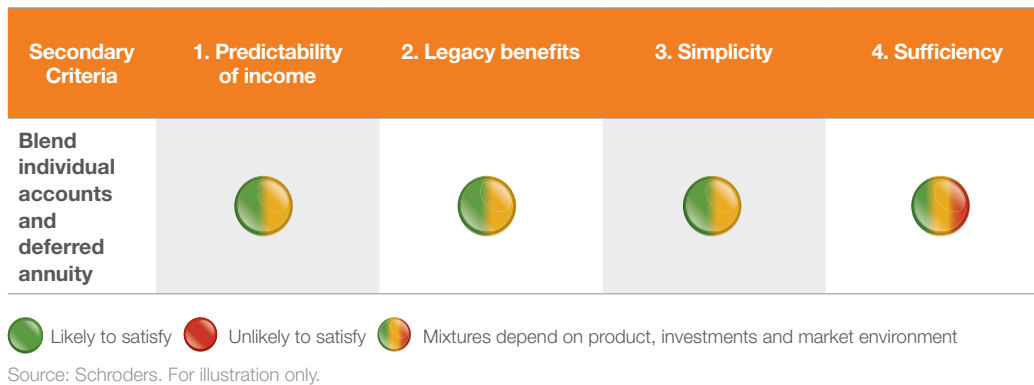


Figure 29: blended solutions also more of their wants



These are simple examples, given as illustrations only. In practice, required withdrawals, investment strategy and annuitisation ages will vary based on individual circumstances and experience. Annuity rates will vary over time and successful commercial solutions are more likely to spread their purchase over time rather than using single premiums.

Even though those designing the default strategy should first be concerned with the primary criteria, strategy differentiation is more likely to come in the detail and added extras. For example, using annuities with survivor benefits, implementing guarantees at the account-based stage or providing annuity cash-out payments could all increase the solution's appeal on the secondary criteria. Costs would be involved, and the extent to which the benefits outweigh these is a matter of individual preferences.

5.2 Opting out

The strategy would be designed to appeal to as high a proportion of people as possible, but cannot be ideal for everyone. This is why it should be optional, rather than a mandatory set of rules. This allows people to opt out in favour of a different approach of their own choice.

We suggest that people should only be allowed to opt out if it is suitable for them to do so. This effectively nudges people in the right direction. Opting out requires a judgement about the circumstances in which someone should be allowed to opt out. In some markets, such as the US, Singapore and Australia, one-to-one financial advice or guidance at retirement is encouraged – a similar framework could be adopted to ensure retirees have considered their options fully before opting-out. Although perhaps an artificial construct, this creates a hurdle which will deter some people from opting out.

The State may ultimately bear the burden from those who opt-out and subsequently deplete their savings too early, which makes this another politically-sensitive matter. Given the varying needs and preferences of individuals, however, we believe that opting-out should not be quantitatively means-tested. Open, realistic communication, combined with sensible alternative options is preferential to mandatory annuitisation.

5.3 The global solution to the post-retirement problem

The move from DB to DC has transferred longevity and investment risks from the plan sponsor to the individual plan member. Without the actuarial cross-subsidies implied by pooling these risks, the danger of outliving one's savings is significant. We need to find a better solution to this problem than an early grave.

The key risks to which an individual is exposed are inadequate savings, unexpected outcomes in investment, inflation and longevity as well as forced changes to consumption needs (e.g. health-care). To manage these risks in a balanced and robust manner requires a hybrid strategy of individual investment accounts and insurance.

Faced with uncertainty and the availability of many choices, in the absence of good quality advice or guidance, retirees are likely to make sub-optimal decisions. Some have therefore argued for the creation of a post-retirement "default strategy", as this can offer a better starting point for these decisions.

Having a single default fund in post-retirement is not the approach we are advocating for several reasons:

1. Everyone's circumstances will differ and so they should have the ability to select the appropriate individual investment fund and longevity protection that fits their needs.
2. Due to these differing circumstances, there is a risk that any one fund selected as a default will not be suitable for an individual and this may result in a mis-buying/mis-selling risk.
3. Financial literacy, while low in many markets, does appear to be improving in some (or at least a lot of money is invested in this area by governments and NGOs). Additionally people have more access to the internet than historically and may be more willing and able to research and make investment decisions in future.
4. While choice is not always used well, it is certainly popular in a number of markets. To suggest that a default should be only one fund would reduce the attractiveness.
5. In practise it is difficult to see how one would get agreement on what should constitute a "default".

Rather like building regulations that ensure buildings are built on a set of robust principles, we favour an approach that seeks to establish a set of principles which are the necessary conditions for good quality retirement solutions. In the UK there have been preliminary discussions about 'Kitemarking' funds as suitable for retirees to manage the issue of newly available choice at retirement (the Kitemark is awarded to a product or service that has been tested independently to show that it meets suitable standards). This is synonymous with funds that are 'QDIA-approved' (meaning default-approved) in the US for pre-retirement. However, an over-arching solution is far broader than simply a fund or insurance product.

In our view, the ingredients for a successful solution will comprise the following components:

- Stable, real investment returns, net of costs
- Reliable protection against longevity risk, later in life
- Flexibility to adapt to changing requirements
- Simplicity in implementation and communication of outcomes.

5.4 How could this work in practice?

Where a fiduciary is involved, for example in a corporate plan, an individual could be given a short-list of suitable investment funds and a short-list of suitable longevity protection options from which to choose. The individual would also choose the proportion to allocate to the investment component and the remainder to the protection component. A minimum proportion could be imposed on each. If permitted and tax-efficient, a partial cash lump sum might also be taken at point of retirement.

Using technology and real-world assumptions, individuals could assess the likely impact of different choices on the illustrative outcomes they receive, with a clear distinction between guaranteed and non-guaranteed benefits, and the purchasing power of future income. This choice could be revisited on a regular basis, to assess the changes due to investment performance and risk evolution. At some point, as our earlier analysis showed, there is a tipping point beyond which the protection component becomes far more valuable.

‘Select one from list A and one from list B. Choose the proportion to allocate to each’

List A – investment component	List B – protection component
1. Fund targeting inflation +1-2% p.a. over the long term	1. Immediate annuity
2. Fund targeting inflation +3-4% p.a. over the long term	2. Deferred annuity (commencing at age 85)
	3. Delay annuity purchase until later in retirement

The options in list A would provide stable, real investment returns and be able to adapt to changing requirements (both in terms of market conditions and an individual's needs). In reality, this means that the funds in list A are likely to be well diversified and fairly liquid. Clearly the Kitemarked/approved components in both lists should offer ‘value-for-money’. This should not be confused with ‘cheap’. A purely passive strategy is unlikely to deliver the real-world outcomes that savers and retirees need.

Individuals should be encouraged to select from the two lists by taking guidance or advice at this important point in their financial planning lifetime. For those with very small account sizes, it will not be practical to split the account in this way (longevity protection in particular may not be available) and so a minimum account threshold would also need to be established. As ever, the implementation of this approach will need some considerable thought (and is beyond the scope of this paper).

For retirees where no fiduciary is involved at retirement, providing guidance about the need to have both components and having approved choices should help retirees with this difficult decision and improve outcomes for them. Asset managers and insurers should take some responsibility for the thoughtful design of these strategies.

Not all retirees can afford a Ferrari, but most would prefer their retirements to be slow and comfortable, rather than quick and costly. Our suggested approach succeeds in shifting the starting point of the post-retirement conversation towards a healthier long-term solution, giving retirees the deserved opportunity to maximise their financial longevity.

Appendices

The Australian Model (Fully flexible individual accounts, called Account Based Pensions)

At retirement, Australian pension benefits can be taken as a single lump sum, be used to purchase an income stream, be left in the Superannuation fund or a combination of these. If no decision is made, the benefits will remain in the Superannuation fund. The 2014 Murray report¹² stated that just over 50% of Superannuation benefits are paid as lump sums, while the other half are paid as income streams through Account Based Pensions (ABP). In reality, while some take the money as a lump sum, most of the money is then 'rolled-over' to an ABP, it's not necessarily withdrawn and spent.

Individuals choosing to purchase an income stream enjoy a greater tax advantage as investment earnings are tax exempt and for most over 60s income payments are also tax exempt. In contrast, individuals over 60 who choose to withdraw a tax-free lump sum or leave their savings in the Superannuation will be taxed on future investment earnings.

The lump sum option is useful for Australians with small Superannuation balances, as these are unlikely to provide an adequate income. The Australian Bureau of Statistics (ABS) data (see Figure 28) shows that many retirees who received a lump sum used the money to pay off their home or vehicle, pay for home improvements, buy a new home or vehicle and pay off their outstanding debt. This form of current consumption reduces future retirement income, increasing the risk of exhausting their savings during retirement. In addition, the Murray report believes that the ability to use pension savings to pay debts at retirement encourages greater pre-retirement consumption and borrowing¹².

Figure 28: Many retirees are using their lump sums to repay existing debt or for current consumption

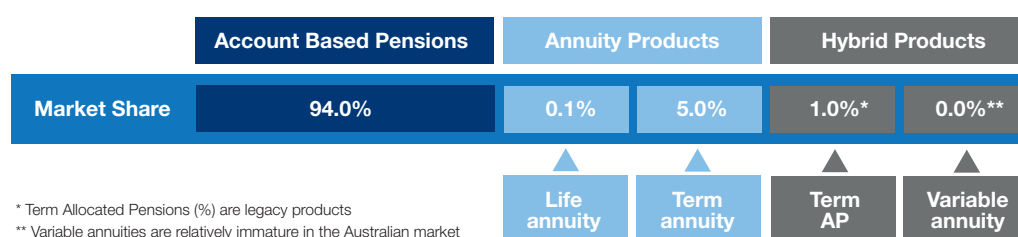
All uses of lump sum payments for those who retired at age 65 and over and who received a lump sum*	% of people who received a lump sum
Paid off home/paid for home improvements/bought new home	32%
Invested the money elsewhere/personal savings/bank	27%
Rolled it over/invested it in an approved deposit fund/deferred annuity or other Superannuation scheme	21%
Bought or paid off car/vehicle	19%
Paid for a holiday	14%
Cleared other outstanding debts	12%
Other	6%
Assisted family members	5%
Purchased an immediate annuity	4%
Undecided/Did not know	4%

*Lump sum might be used for more than one purpose. Source: ABS, Charter Group estimates. As at 31 March 2013

At retirement, individuals have a range of income stream products to choose from; ABPs, annuities and hybrid products. ABPs are, by far, the most popular choice with a Mercer⁴⁷ survey finding 94% of those taking an income elected for this option (see Figure 29). ABPs allow individuals to choose the amount and frequency of their income, including a lump sum if desired, making this option attractive to those who value flexibility.

⁴⁷ Post-retirement market trends in Australia, Mercer, June 2014.

Figure 29: Account Based Pensions are the dominant choice for providing a retiree's income stream



Source: Post-retirement: Market trends in Australia. Mercer. June 2014.

Australia's life annuity market is small, with few purchasing a life annuity. The Murray report¹² suggested behavioural biases are the cause of low demand for longevity products. Along with the value placed on flexibility, other biases include; annuities being seen as a risky gamble, underestimation of life expectancy and the view that annuities do not deliver value for money. In addition, deferred annuities are not offered in Australia as tax and Superannuation laws do not permit them, although this is under review.

The 'ASFA Retirement Standard'⁴⁸ is guidance communicated to Australians regarding the annual budget that they are likely to need in order to fund either a 'Comfortable' or 'Modest' standard of living in retirement. It is updated quarterly to include changes to inflation, has different amounts for single and married individuals, the State in which they intend to retire and also splits the amounts down by housing, clothing, food, energy, leisure etc. A comfortable retirement is defined as 'being involved in a broad range of leisure and recreational activities and have a good standard of living through the purchase of things such as household goods, private health insurance, a reasonable car, good clothes, a range of electronic equipment, and domestic and occasionally international holiday travel'. 'Modest' retirement is described as 'better than the Age Pension (i.e. state benefits) but still only able to afford fairly basic activities'. As we see in Figure 30, the ABS found that households of couples spend closer to the 'comfortable' end of the range compared to singles.

Figure 30: On average, singles' spending is 'Modest' where couples are mid-way to 'Comfortable'

Spending versus ASFA retirement living standards	Couples 65+	Individual 65+
Average weekly spending	\$855	\$446
Average annual spending	\$44,460	\$23,192
ASFA — Modest single		\$22,641
ASFA — Modest couple	\$32,603*	
ASFA — Comfortable single		\$41,169
ASFA — Comfortable couple	\$56,317*	

*US\$ equivalents: Modest couple = c.US\$26,500. Comfortable couple = c.US\$46,000⁴⁹.

Source: ABS, ASFA Retirement Standard, March 2013 Quarter.

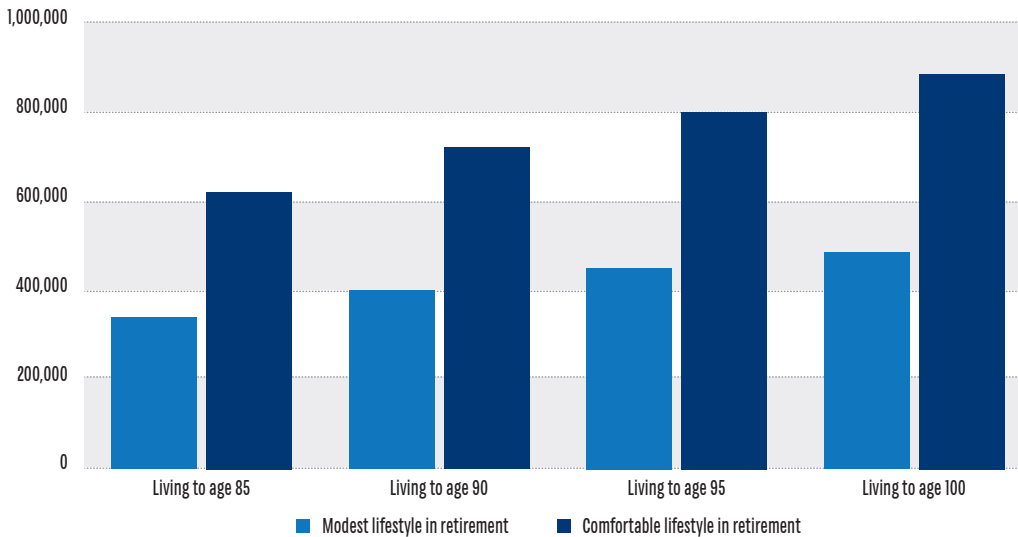
⁴⁸ Association of Superannuation Funds of Australia (ASFA) – 'the peak policy, research and advocacy body for Australia's Superannuation (super) industry'.

⁴⁹ All currency conversions in the appendices are based on respective USD exchange rates at 31/12/2014. Source: Bloomberg.

A study by Deloitte⁵⁰ found that the average 65 year old's Superannuation balance is a long way short of being able to fund a 'Modest' or 'Comfortable' lifestyle during retirement, and 81% still rely on the government pension to supplement income. Deloitte also highlighted the impact of longevity on the amounts needed and the amounts that individuals have (see Figure 31).

Figure 31: Average Superannuation balances are significantly below the projected lump sum needed

Lump sum needed at 65 (AU\$)



Average Superannuation balances	Male (AU\$)	Female (AU\$)	All (AU\$)
60 – 64 year olds	85,000	59,000	77,000
65 – 69 year olds	77,000	55,000	72,000

Source: Source: Dynamics of the Australian Superannuation system. Deloitte Actuaries & Consultants. September 2013.

In addition, the Murray Report suggests that there are some who are depleting their Superannuation savings at the earliest opportunity in order to increase their means-tested benefits from the State. This causes major problems for retirees and the government, as this approach will leave them dependent on the Age Pension for the majority of their retirement income when it is only designed to provide basic benefits.

As we noted in the body of this report, there is a trend towards phased/partial retirement. Analysis by the ABS found that 'Of those working full-time and intending to retire, approximately 40% people intended to leave full-time work and take up part-time work before retirement' but also that 'people who intended to continue with full-time work until retirement, 63% intended to remain with their current employer and had no further plans to phase in retirement'. This shows that less than half will move into part-time employment and the majority of the rest will not take a phased retirement. This suggests phased retirement is a less likely trend in Australia compared to other countries, possibly due to some of its income tax rules.

Advice on how an individual can fund retirement is provided through a number of channels in Australia. A government funded website, Money Smart, provides financial guidance, budget planners and a retirement income guide that outlines the lifestyle incomes and the amount needed to fund them. While the information provided is in depth, it is still recommended that retirees seek advice for their specific circumstances. There is a highly developed and regulated financial planning industry and a survey by ANZ⁵¹ found that over half (53%) of those aged 55-69 had consulted a financial adviser. It noted that those with higher incomes were most likely to have taken advice compared to those on lower incomes who have a larger reliance on state funding.

⁵⁰ The dynamics of the Australian Superannuation System, The next 20 years: 2013-2033, Deloitte, published 2013.

⁵¹ Adult Financial Literacy in Australia Survey, ANZ. December 2011.

The outcomes of the Murray report include a move to set clear objectives for the Superannuation system's provision of income in retirement. The aim is to increase the use of risk-pooling and decrease the over-reliance on ABPs. A key change will be to require Superannuation trustees to pre-select a 'default' comprehensive income product for members to receive income when they retire. Members will have the option to take their benefits differently but the aim is to have a suitable default in place. While not explicitly stating that flexibility will be removed, it suggests the average retiree will be guided to a suitable retirement solution rather than being offered full-flexibility as standard.

The Chilean Model (programmed withdrawals or annuity or hybrid)

At retirement, individuals can choose between:

1. Programmed withdrawals – a formula is used to calculate the amount that can be taken out each year based on the account size, prevailing interest rates, age, dependents etc. This is changed annually and is individually-based.
2. An immediate annuity – individuals can select an annuity at retirement or switch to an annuity at any point but this is a one-way decision.
3. Temporary income (usually less than 5 years) with a deferred life annuity.
4. Immediate life annuity for a portion of the DC account and programmed withdrawals for the remainder i.e. a combination of options 1 and 2 above.

In addition, the government will top up the withdrawal option to a minimum level for the duration of a retiree's life if he/she has insufficient funds or lives longer than his/her account lasts.

Historically high interest rates and high commissions on annuities resulted in more than 66% taking an annuity at retirement. More recently, due to low interest rates, the split between programmed withdrawal and immediate annuity is around 50/50⁵².

If the retiree decides to remain with their chosen private sector Pension Fund Administrator's (AFP) for programmed withdrawals, their savings can only be invested in the three least risky funds (C, D or E which have maximum equity allocation limits of 40%, 20% and 5% respectively). The programmed monthly withdrawals are subject to a maximum income, which is determined using the same model as insurance companies, and changes yearly depending on how much an individual has previously withdrawn and market returns. In addition, those who remained with APF still have the option of buying annuity, and on death remaining balances are passed onto their dependents.

At retirement there are independent financial advisors to help retirees with their choice, although there is a lack of specific qualifications required to act in this capacity. There are concerns about whether their advice is commission neutral, with speculation of higher commissions received from insurance companies.

There are also significant concerns about account balances being too small to provide adequate pensions. When the mandatory DC system was formed in 1981, the initial target replacement rate was around 70% of an unspecified salary. However, the current net average replacement rate is 51.8% for men and 41.6% for women⁵³. There are four key reasons why the replacement rate is lower than that targeted:

- Returns on investments are lower than when the system was formed
- Salaries have increased significantly but DC savings have not kept pace with this
- Periods of no saving e.g. unemployment, informal employment or self-employed (this latter category did not have to save, although they will be mandated to do so in future)
- Only a portion of the salary is treated as pensionable income (lunch and travel allowance not included for example).

Voluntary employer-sponsored (APVC) and voluntary individual savings (APV) accounts allow Chileans to save more for retirement, on a tax deferred basis. The APVC was introduced in 2008, and requires 15% of company employees or 100 workers to become members before the employer is required to make contributions. However, there are low uptakes.

⁵² Superintendencia de Pensiones, 31 December 2014.

⁵³ Pensions at a Glance 2013. OECD.

The new Chilean government is keen to address these issues and in May 2014 it established an advisory committee on pension reform, known as the Bravo Commission. The commission's remit is to take proposals from institutions, experts and corporations and produce a report with its proposals for system reforms. It is suggested that the latest draft includes increasing the maximum contribution cap value, pushing back the retirement age, increasing overall contributions by imposing employer contributions and creating a state-run pension fund manager. The commission is expected to complete and deliver its final report in August 2015.

The Netherlands' Model (Collective DC and DC)

In addition to the first (State) pillar, the majority of Dutch employees have second pillar collective pensions. There are three types of pension funds^{54,55}:

1. Industry-wide pension funds (12% of members)
2. Corporate pension funds (76% of members)
3. Pension funds for independent professionals such as medical specialists and dentists.

Both these pillars are trusted and reliable, with the Dutch attaining extremely high net pension replacement rates, according to the OECD. In addition, most pension payments increase annually, which can depend on wage and/or price growth. Planned changes for the Dutch pension system include increasing the retirement age to 67 by 2023, capping the maximum amount of pensionable income and a decrease in the maximum contribution rate.

More than 90% of employees belong to a pension fund, the majority of which are in industry-wide pension arrangements. The majority of individuals are in DB plans (93.5% in 2012⁵³), although the proportion of DC and Collective Defined Contribution (CDC) plans are growing. This pension system is financed by tax deferred employee and employer contributions, totalling about 16% of the employee's gross income, with about two thirds funded by the employer.

For those in a CDC scheme, which is a hybrid scheme that pools contributions and investments, a pension is set by each plan's board annually. Pensions are based on the coverage ratio (relationship between fund assets and pension liabilities). The pension provided is based on the employee's salary and number of years in the scheme, similar to a DB plan, but with fixed contributions. If CDC plans become underfunded, employee's contributions could increase, there could be no cost-of-living adjustments, or pension benefits can be lowered. Essentially, CDC relies on solidarity within the workforce, in which many Dutch believe, and current redesigns intend to allow for a more flexible and mobile workforce.

Unlike a standard DC approach, a CDC plan's assets are pooled for all members so there is no transparency for individuals to see the asset allocation or risk profile in retirement. Unlike a DB plan, where the employer guarantees the level of payment in retirement, the amount of income received from a CDC plan is not guaranteed. Although the pooling of employed and retired individuals pension savings is designed to smooth the impact of significant moves in financial markets, it is still possible for retirees to have their income cut if the total fund falls below a specified solvency level. The first instance of these reductions was in 2013. A deficit of €30bn (c.US\$36bn⁴⁹) across the pension industry led to reductions in nominal pension benefits of 2% on average but as high as 7% for some members of smaller plans⁵⁶.

For those employees with an individual DC plan it is mandatory for them to purchase an annuity with the entire fund. The only exception is where the fund is too small to provide a minimum annual amount, in which case this can be taken as a lump sum.

⁵⁴ The Dutch Pension System, an overview of the key aspects, Dutch Association of Industry-wide Pension Funds, Dutch Association of Company Pension Funds.

⁵⁵ Euracs.eu, The Netherlands Pension Summary, Dutch Ministry of Social Affairs and Employment (June 2008, publication number SWZ 74R610). Numbers and amounts have been updated on the basis of information publication number SWZ 74R610). Numbers and amounts have been updated on the basis of information published by De Nederlandsche Bank and Centraal Bureau voor de Statistiek.

⁵⁶ Hybrid Pensions: Risk Sharing Arrangements for Pension Plan Sponsors and Participants. Pension Policy Center. February 2014.

The Singaporean Model (Compulsory ‘annuity’ purchase)

Singapore has one main pillar that provides compulsory DC plans through the Central Provident Fund (CPF). On an individual’s 55th birthday a Retirement Account (RA) is created from two of the savings accounts they have made contributions to (the Ordinary account and Special account) which then earn 4% interest per annum. If a member has at least SG\$40,000 (c.US\$30,000⁴⁹) in their RA at age 55 or SG\$60,000 (c.US\$45,000⁴⁹) in their RA at their chosen drawdown age (DDA), they are automatically enrolled in CPF LIFE, and have six months to choose between the two plans (Standard and Basic). The Standard plan is designed to provide income in retirement and the Basic plan allows more flexibility to leave larger bequeaths to dependents. If no decision is made, they will be placed on the Standard Plan.

As part of the CPF LIFE Standard plan, when a member turns 55 the first annuity premium is taken from their RA (up to a set amount, currently SG\$150,000⁵⁷) and then two months before a member’s DDA the rest of their RA is used as the second annuity premium. The CPF LIFE Basic plan also takes an annuity premium when a member reaches age 55 but this is much lower than the Standard Plan (around 10% of the member’s RA – depending on age & gender⁵⁷). When the member reaches their DDA they receive monthly payments from their RA until their 90th birthday, after which the payment is made from the annuity fund. If the member dies before their 90th birthday, any residual funds can be paid as a bequest to their dependents.

As we discussed earlier in this paper, CPF Life is not a life insurance company. The fund works by pooling the risks of its members and benefits are not insured, therefore, not guaranteed. Both plans provide monthly pay-outs starting from a member’s DDA for as long as they live, which are reviewed yearly to adjust for changes in factors such as mortality and investment income, but increases are not explicitly linked to any inflation measure. Annuity premiums are invested in Singapore Government Bonds, the government guarantees a minimum rate, announced annually (4% in 2014). In terms of pay-out, the Standard plan provides a higher monthly pay-out, and a lower bequest when compared to the Basic Plan. Members can increase their pay-outs by making top-ups, subject to a limit depending on their RA and the Minimum Sum (MS). In addition, the government provides a CPF LIFE Bonus of up to (SG\$3,300), used to ‘enhance’ pay-outs of members who meet certain conditions, and has been given to 69%⁵⁸ of CPF LIFE participants.

If a member was not automatically enrolled to CPF LIFE, they can apply to join, otherwise the member’s money remains in their RA and forms the Minimum sum scheme (MS Scheme), which provides a monthly income for about 20 years. The CPF considers those who have other forms of retirement savings. For example, members who have already bought a pension or annuity using cash may be exempt from the MS Schemes and not required to join CPF LIFE, once assessed.

The South African model (Pension fund / Provident funds)

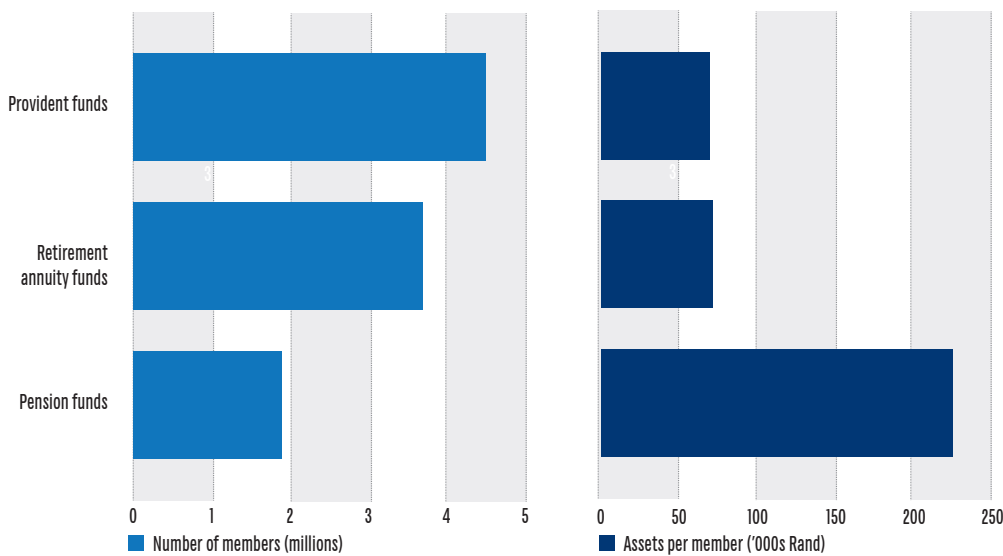
The South African three pillar pension consists of the state pension, occupational fund arrangements and voluntary savings. The state Old-Age pension provides monthly payments for those over 60, who pass the income and assets test, and meet certain conditions. This is funded by tax revenues, and is the main source of income for 75% of the elderly. The voluntary occupational pillar is dominated by DC plans (91%), with an average contribution rate of 15% (between employer and employee) of employee wage and salary. This pillar consists of pension funds and provident funds, which differ by retirement benefit options.

The National Treasury report⁹ outlines the take-up and assets in pension funds and annuity funds: ‘Pension funds are slightly larger than provident funds or retirement annuity funds. But by number of members, provident funds are the largest retirement funding vehicle. Members of provident funds, however, have much lower average assets than members of pension funds. This may be the result of lower levels of preservation by lower-paid workers and the fact that, historically, provident funds were intended for this group.’ This is shown in figure 32.

⁵⁷ <http://mycpf.cpf.gov.sg/Members/CPFSchemes/MinimumSumScheme.htm> - Central Provident Fund 2015.

⁵⁸ <http://mycpf.cpf.gov.sg/NR/rdonlyres/D1780BE4-0277-4AD8-833A-9DDBA4E74B4D/0/Retirement.pdf> - Central Provident Fund March 2015.

Figure 32: Although they have the smallest membership, pension funds have the largest per member assets



Source: Enabling a better income in retirement. South African National Treasury. September 2012.

Those with a pension fund are required to convert at least two thirds into taxable 'annuity' benefits at retirement, unless funds fall below a minimum limit (currently below ZAR 75,000⁵⁹ (c. US\$6,500⁴⁹). The first annuity option is a conventional annuity; which provides a guaranteed regular income for the life of the member, in-turn protection against longevity. The second option is a living annuity, which as we discussed earlier is actually a tax-protected phased-withdrawal product that provides a non-guaranteed regular income. Legislation limits the drawdowns to between 2.5% and 17.5% of the value of capital invested, per annum. The level and frequency of income can be typically reviewed annually.

Those with provident funds can withdraw their total retirement benefit as a lump sum, which is taxed depending on the years of service and highest annual average salary during five consecutive years. With this freedom, just over a third (38%) of retirees had depleted the lump sum they received within an average period of 2.4 years⁶⁰. In an aim to help those with provident funds manage longevity risk, new rules by the government will soon require them to follow the same rules on retirement benefits as those with pension funds (convert two thirds into an annuity). This is likely to come to effect in March 2015, and apply to new contributions by those under 55.

The National Treasury⁹ found that only 20% of retirees chose conventional annuities, explaining that the state pension means-test may discourage the purchase of conventional annuities, and that the commission earned by brokers for selling living annuities, may be up to ten times larger than from selling a conventional annuity.

It should be recognised that the average mortality rate in South Africa is much higher than in the other countries with World Bank data showing average life expectancy to be age 56⁶¹. This means that many people die before they reach 65 and therefore annuities may be less suitable for the majority of South Africans than programmed withdrawals.

The median amount being drawn down is between 7.5% and 10% p.a., the average policy draws down just over 9% annually⁶². These rates are before fees and fees for this type of product in South Africa can be as much as 3% p.a. Figure 33 below shows that individuals draw the most between ages 55 and 69, which is consistent with the average life expectancy.

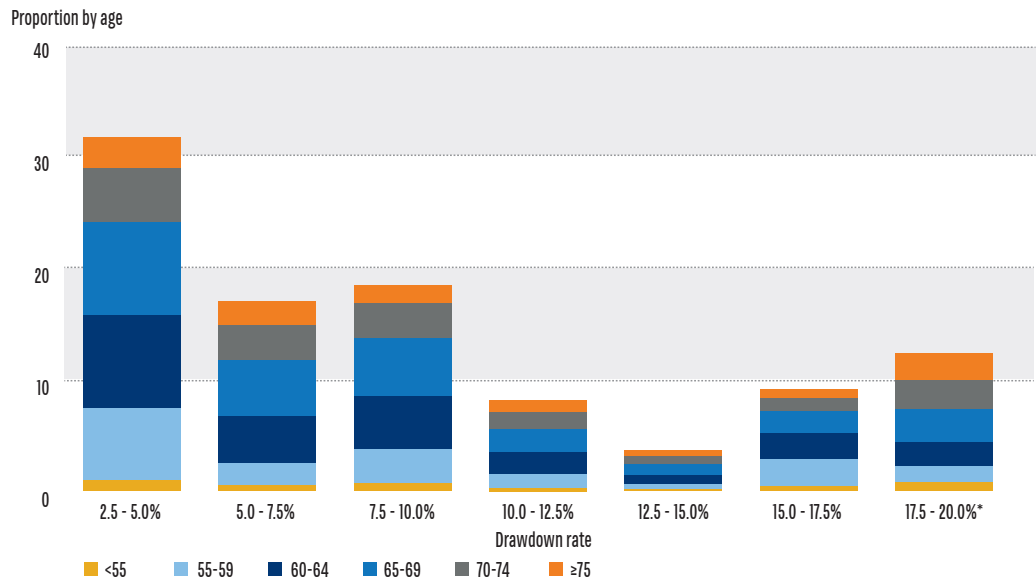
⁵⁹ Improving tax incentives for retirement savings. National Treasury. October 2012.

⁶⁰ Sanlam Benchmark Survey 2014.

⁶¹ World Bank Databank. As at December 2012.

⁶² ASISA, 31 December 2011.

Figure 33: In the main, drawdowns are below 10% p.a. but a significant minority takes over 15% p.a.



* When the upper limit was reduced to 17.5%, existing policies which were drawing over 17.5% were permitted to stay above this limit.
Source: Enabling a better income in retirement. South African National Treasury, September 2012.

In South Africa the average replacement ratio target is 75% of final salary, however this is rarely achieved. As a result, in the 2014 budget, the government increased the amount of lump sum benefit that is tax-exempt, to help those with low retirement savings. In addition, the government plans to improve tax incentives in order to encourage more discretionary savings.

The Swedish Model (Annuity)

Sweden has a three tier pension system; the statutory pension, the quasi-mandatory occupational pension and the voluntary pension⁶³. The statutory first tier consists of three parts:

- The guaranteed pension: Funded by tax revenues, is for people with no or low income. The full pension is only available if the individual has lived in Sweden for 40 years, since the age of 16.
- The earnings-related pension: Employees and employers contribute 16% in total of an individual's annual income into their own notional account.
- The premium pension: Workers contribute 2.5% of their annual income into their individual account, which is invested into up to five different unit trusts chosen by the individual, or in a default fund if no choice is made.

The mandatory individual account system managed by PPM, was introduced in 1999 (Prempensionsmyndigheten or the Premium Pension Authority in English). The earnings-related pension and premium pension are paid out as life annuities. The accumulated amounts from the earnings-related and premium part are divided by a denominator (based on life expectancy and projected income growth) to determine the life annuity amount paid to the retiree. Individuals can choose between single and joint life annuities, fixed or variable rate. PPM is the only provider of annuity products in Sweden and is effectively a risk-sharing non-profit pool. A fixed annuity is provided by PPM by moving fund assets to PPM, which then invests them and provides a guaranteed element and a profit sharing bonus. Alternatively, the individual can continue to invest in unit-linked accounts and PPM calculates an annuity on an annual basis, based on the amount of money remaining in the account and estimated remaining life expectancy (based on a cohort for that year). It is also possible to purchase a survivor benefit when applying for the premium pension, reducing the amount available for the pension.

⁶³ Statutory and collective insurance schemes for the Swedish labour market 2014, Confederation of Swedish Enterprise Insurance Information, February 2014.

The earnings-related pension and the premium pension can be drawn as a percentage of the account: 100%, 75%, 50% or 25%. The percentage is chosen by the individual and can be different for the two different pensions.

In the second tier, occupational pensions, about 90% of the Swedish labour market is covered by contractual pension arrangements that top up the public pension with an additional contribution rate. The benefits from these plans are determined by nationwide collective bargaining agreements. White collar/salaried employees are in the ITP plan (DC since 2007) and blue collar ('wage earners') workers are in the SAF-LO scheme.

These pension arrangements enable people to retire on incomes of up to 75% of earnings⁶⁴. However, in comparison to many of its European neighbours, Sweden also has a much higher proportion of people still working between the ages of 55-64. Like many other countries we have studied, individuals are expecting to have a phased retirement. A study by Aegon⁶⁴ estimates that just 35% of individuals will stop working immediately on retirement.

The AEGON study⁶⁴ also found that Sweden has the highest amount of habitual savers, and are among the most optimistic about retirement. This may be because during retirement, healthcare is a major source of spending in many countries, but in Sweden municipalities are responsible for providing long term care, so individuals have less healthcare-related expenses to worry about.

The UK Model (DC – Lump sum, annuity and programmed withdrawals)

The UK pension market has been through significant changes in the last few years. Defined Benefit plans, the traditional provider of retirement income, are, in the main, closed to new employees and, in many cases, also to new accrual of benefits. Government statistics show that between 1997 and 2012, the proportion of employees with a DB occupational pension scheme fell from 46 per cent to 28 per cent⁶⁵. DC membership increased over the same period but not sufficiently to replace DB provision. To encourage pension saving, the government has introduced a mandatory workplace DC pension plans to boost the country's existing DC provision. This means DC pensions will provide a greater proportion of retirement income in the future and will be the sole source of pension income for many.

Prior to April 2015, it was mandatory that retirees bought an annuity with 75% of their retirement savings, the remaining 25% being available as a tax-free lump sum on retirement. In 1995, account-based income drawdown was introduced with specific limits over the level of withdrawals, based on age and government bond rates (providers often required significant funds of £250,000+ (c.US\$390,000⁴⁹) for this type of product⁶⁶). Annuitisation was still mandatory when the retiree reached their 75th birthday until 2006 when a further change to the rules allowed continued drawdown post-75. However, the drawdown option had always been used by a minority with the largest retirement savings.

After April 2015, the requirements for annuitisation were removed entirely and a significant reduction to the minimum requirements for an individual to draw down their income introduced (prior limit of £100,000 reduced to £20,000). Limits on lump sums will also be removed, essentially allowing 100% to be taken in a lump sum at retirement (25% of which is still tax exempt with the rest taxed at the individual's marginal rate).

Under the previous legislation, only those with large pension accounts (typically >£310,000) or small sums (<£18,000) had flexible retirement options⁶⁷. With all DC plan members now able to choose their retirement options, there will be an estimated 400,000 people per year who need guidance and advice on the appropriate course of action for their retirement. A survey by PwC shows that the majority of individuals (63%⁶⁸) intend to seek independent financial advice on their retirement approach but with the average savings pot of £40,000 (c.US\$62,000⁴⁹) the affordability of traditional advice may be a barrier to entry for some. The Government has included a "Guidance Guarantee" in its legislation to ensure that even those with small retirement pots will receive a level of free guidance to assist with their decisions.

⁶⁴ The changing face of retirement. The AEGON Retirement Readiness Survey 201: Sweden Factsheet.

⁶⁵ Office for National Statistics, 2012, Annual Survey of Hours and Earnings.

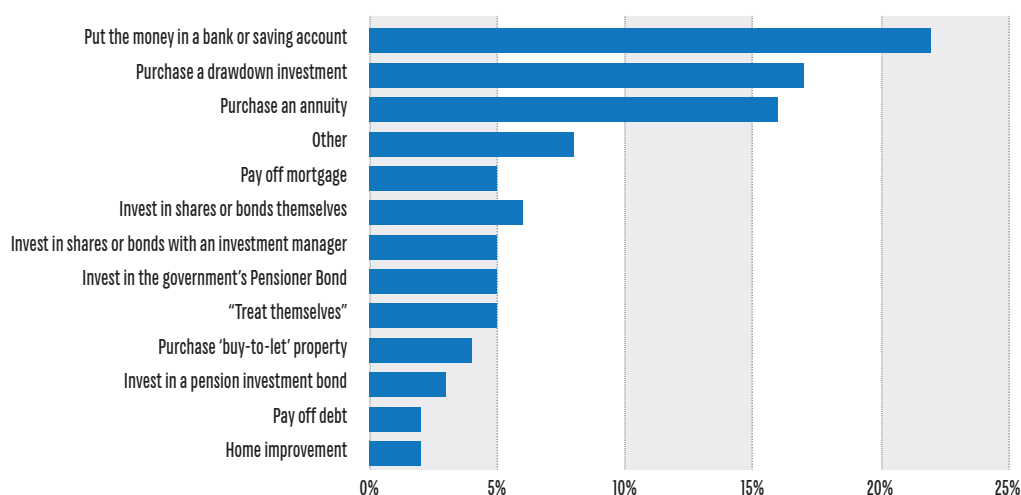
⁶⁶ Modernising Annuities. Department of Work and Pensions. February 2002.

⁶⁷ Freedom and choice in pensions. HM Treasury. July 2014.

⁶⁸ <http://www.pwc.co.uk/financial-services/regulation/the-future-of-retirement-pwc-consumer-survey-on-the-future-for-the-uk-annuities-market.jhtml>

The biggest change to the retirement market is an expected reduction in the number of retirees taking an annuity. Statistics from the Association of British Insurers (ABI) showed a decrease of a third in annuity sales in the first half of 2014⁶⁹, in the wake of the budget changes. Survey data shows that the volume of annual annuity premiums could decline by up to 75%⁶⁸. In Figure 34 we see that individuals are more likely to place their pension savings into a cash account (by taking a lump sum) or use them to purchase a drawdown investment than use them to buy an annuity.

Figure 34: With freedom of choice, many expect to take their pension in cash or drawdown instead of annuities



Source: The future of retirement: consumer survey on the future for the UK annuities market. PriceWaterhouseCooper. April 2014.

Given the radical nature of the changes, their impact will take a number of years to be seen. The decline in annuity sales and a rise of 'irresponsible spending' after taking lump sums have been covered extensively as issues in the press.

In addition to the post-retirement revolution within DC pensions, the current government has undertaken industry consultations on the viability of introducing Collective DC plans in order to pool the risks and costs for members, based on the model used in the Netherlands. While there have been some positive responses to the pooling of risks, many have pointed to the fact that these plans reintroduce an opaque structure that can lead to reductions in retirement income if there are large falls in asset values. The proposals appear contrary to the current direction of pension legislation that is based on individual accounts and flexible options at retirement.

The US Model (flexible choice)

The most widespread type of DC plan in the US is the 401(k) plan. There are also other plans including 403(b) plans, which enable employees of universities, public schools, and non-profit organisations to make tax-deferred contributions, and 457 plans that enable employees of State and local governments to make tax-deferred contributions. A Simple IRA (Individual Retirement Account) plan gives small employers (those with less than 100 employees) a simplified method to contribute toward their employees' pension.

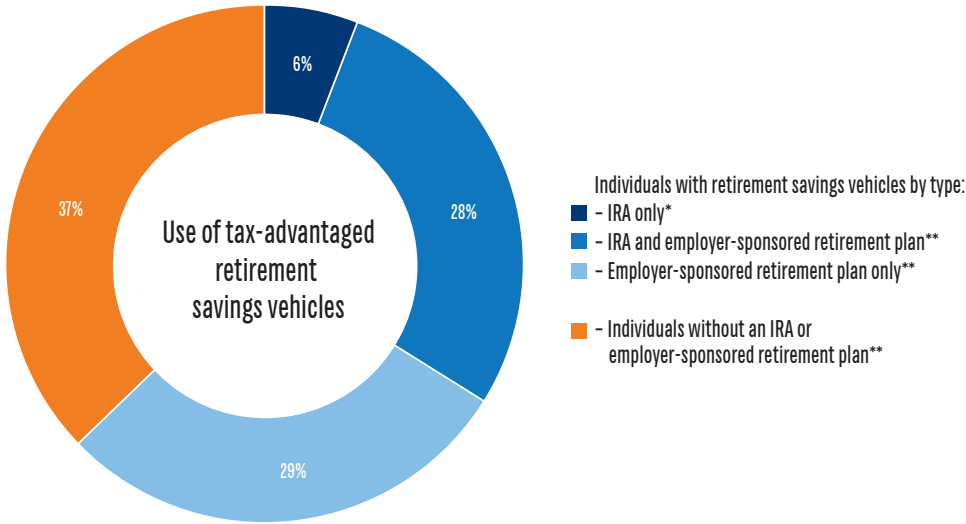
At retirement, individuals may be permitted to stay in their plan or roll their DC account into an IRA. Some plans offer annuities (around 12%⁷⁰) but the largest proportion of individuals receiving income roll into an IRA (41%⁷¹). Some individuals (12%⁷¹) are able to take systematic withdrawals from their plan, sometimes called a periodic withdrawal. Individuals can select a monthly, quarterly, semi-annual or annual withdrawal schedule, but there is generally flexibility to adjust the withdrawal arrangement. It is possible to take a lump sum at retirement but income taxes are incurred on the amount in the year that it is taken, so most do not do this. All retirees must start to take annual distributions from their 401(k) and IRA plans by the age of 70½.

⁶⁹ ABI statistics Q2 2014: The UK retirement income market post-Budget.

⁷⁰ Trends in 401(k) Plans and Retirement Rewards, A report by WorldatWork and the American Benefits Institute, March 2013.

⁷¹ Based on retirees in their 70s. How America Saves 2014. Vanguard. June 2014.

Figure 35: A significant proportion of US households use tax-advantaged retirement savings vehicles

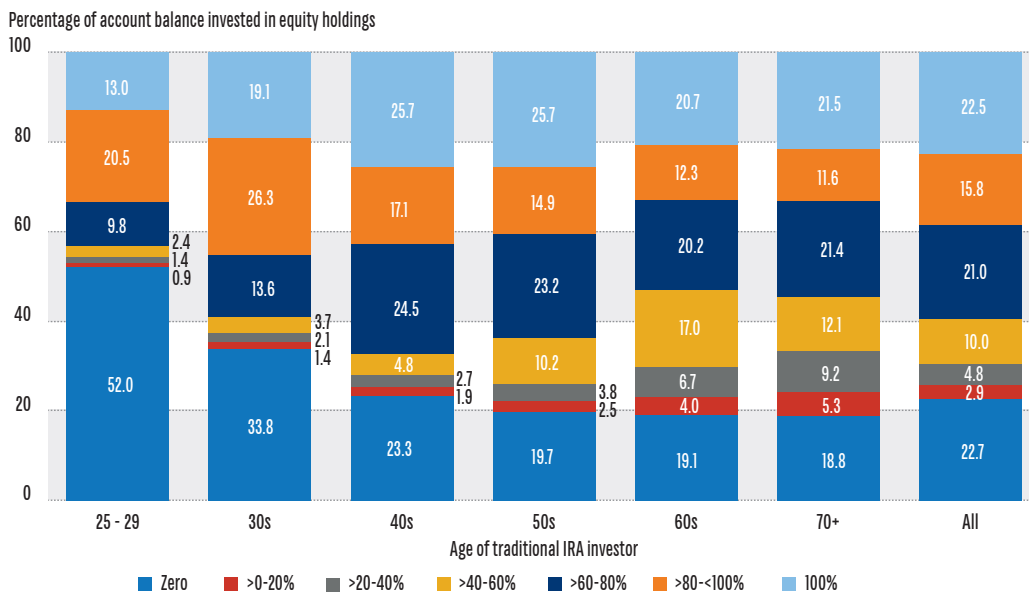


* IRAs include traditional IRAs, Roth IRAs, and employer-sponsored IRAs (SEP IRAs, SAR-SEP IRAs, and SIMPLE IRAs).
 ** Employer-sponsored retirement plans include DC and DB retirement plans.
 Source: The Role of IRAs in U.S. Households' Saving for Retirement, 2014, ICI Research Perspective, January 2015.

The two most common reasons for rolling over into an IRA are to consolidate assets (24%) and not wanting to leave assets with a former employer (24%)¹⁰. Another 17% wanted a greater choice of funds than those in the 401(k) plan, even though the fees are often higher than within a 401(k) plan. The majority of people (66%) consult a professional financial advisor to create a retirement strategy.

In the US, retirement investors have a high allocation to equities. At the end of 2013, 58% of assets held in DC plans and IRAs were invested in domestic or world equity funds⁷² and this exposure is generally gained through hybrid funds that invest in a mix of equity, bond, and money market securities. The proportion held in equities reduces with age, although this is still a significant exposure at age 70 or older (see Figure 36).

Figure 36: Equity allocations reduce but remain significant at, and into, retirement



Allocations as at December 2012. Source: The IRA Investor Profile: Traditional IRA Investors' Activity, 2007–2012, March 2014. Investment Company Institute.

⁷² 2014 Investment Company Fact Book, Investment Company Institute.

Modelling assumptions:

For Figures 14 to 19 and 25 to 27, the following assumptions have been used:

Retiree assumptions

- Final salary = \$50,000
- Replacement ratio = 60%
- Savings as a multiple of final salary = 12 times
- Retirement age = 65 years old
- Annual withdrawal assumed as being taken at half way point in year.
- Mortality probabilities calculated from 'UK Life Office Pensioners, males, Combined, lives' data.

Investment assumptions:

- Periods analysed = 1952 to 2013
- Cash fund: 100% invested in US 3m deposit rate. Proxies used US 3m T-Bills and JPM US Cash 3m
- Equity fund: 70% US equity, 30% global equity. Proxies used S&P500 and MSCI EAFE
- Balanced fund: 50% US equity, 50% US bonds. Proxies used S&P500, US Treasury 10y yield, Barclays US Aggregate
- Inflation: US CPI All Urban seasonally adjusted.

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