JUST.

RETHINK RETIREMENT

OPTIMAL RETIREMENT INCOME STRATEGIES

Insights into the key drivers

A white paper

This document is intended only for investment professionals and financial advisers.

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RETHINK RETIREMENT

Contents

Introduction

Retirees live in an age of uncertainty. Having enough income in retirement has remained the main priority of respondents in all four of Just SA's Retirement Insights surveys conducted since 2018. This reveals that people continuously seek certainty, and not only in times of uncertainty.

No matter how much planning goes into it, when faced with the decision to convert hard-earned retirement funds into a reliable income in retirement, many are still unsure if it will be enough to last.

More than half of the respondents in the latest Just Retirement Insights admitted they are not confident they have saved enough for retirement. And many rely heavily on their financial advisers to help them.

Faced with these challenges, financial advisers need to be armed with solid facts and figures to help guide their clients towards a sustainable retirement income. In this white paper, we set out information designed to help you with those difficult discussions around living annuity drawdown rates and retirement income sustainability.

Understanding the state of our retired nation

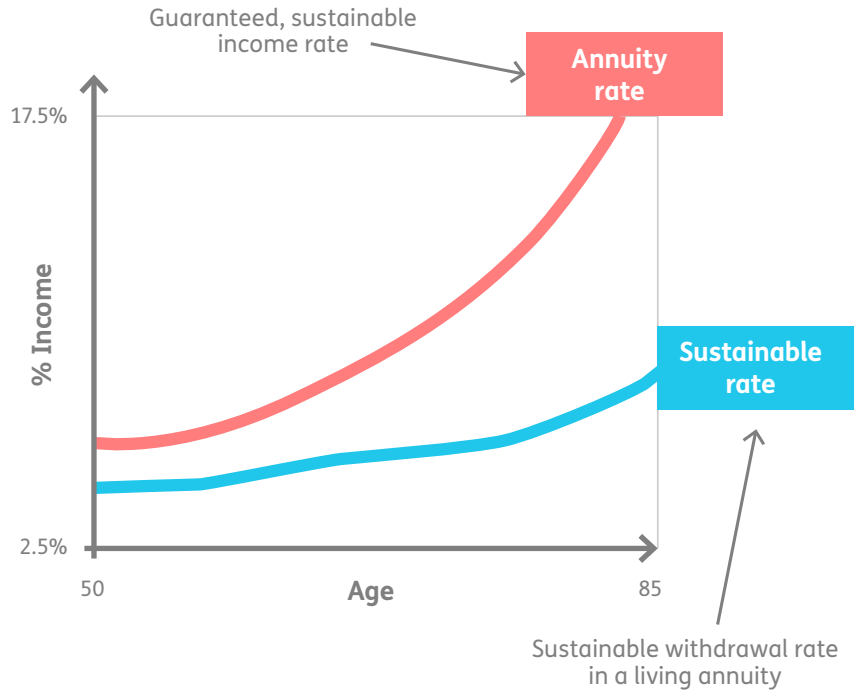
At Just SA, we create what we call 'income sustainability maps' to show the state of South Africa's living annuitants. These income sustainability maps present the distribution of living annuitants (all anonymous) by age and current drawdown percentage. We started creating these maps in 2019 to help advisers analyse the risk of their living annuity clients, and to date we've studied more than 20 000 lives in this way.

Our income sustainability maps show two reference rates, as illustrated in Figure 1:

1. Life annuity rates, which by their very nature are the maximum sustainable income a retiree can get. These are shown in coral.
2. Sustainable drawdown rates, which are lower given that a retiree is self-insured and should therefore draw down materially less. These are shown in blue.

This mapping provides an overview of a book of living annuitants, and it can also be helpful for an individual wanting to better understand where they are in terms of their own income sustainability.

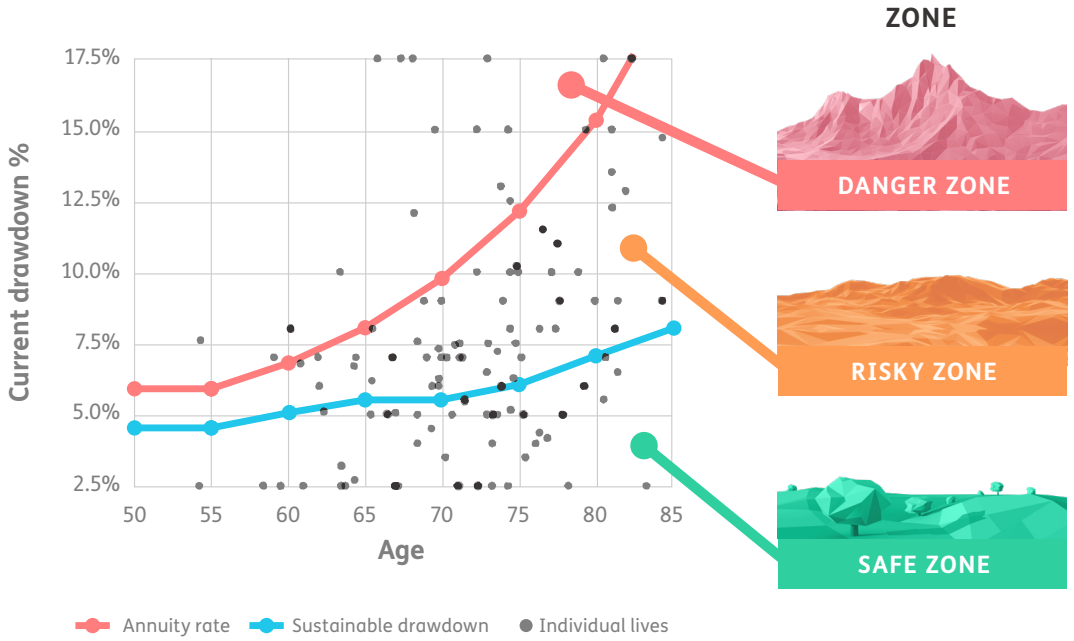
Figure 1: Income sustainability map – reference rates



In relation to these two reference rates – life annuity rates and sustainable drawdown rates – we derived three zones for our income sustainability maps, as per the example shown in Figure 2. Each dot represents an individual client.

- Zone 1 at the bottom is the **safe zone** where a client is drawing down less than the sustainable drawdown rate and therefore has a sustainable drawdown strategy.
- Zone 2 in the middle is the **risky zone** where people are drawing down between the sustainable drawdown rate and the life annuity rate. We see potentially unsustainable drawdown strategies for individuals in this zone.
- Zone 3 at the top is the **danger zone** where annuitants are drawing above the guaranteed sustainable annuity rate. These drawdown strategies are unsustainable.

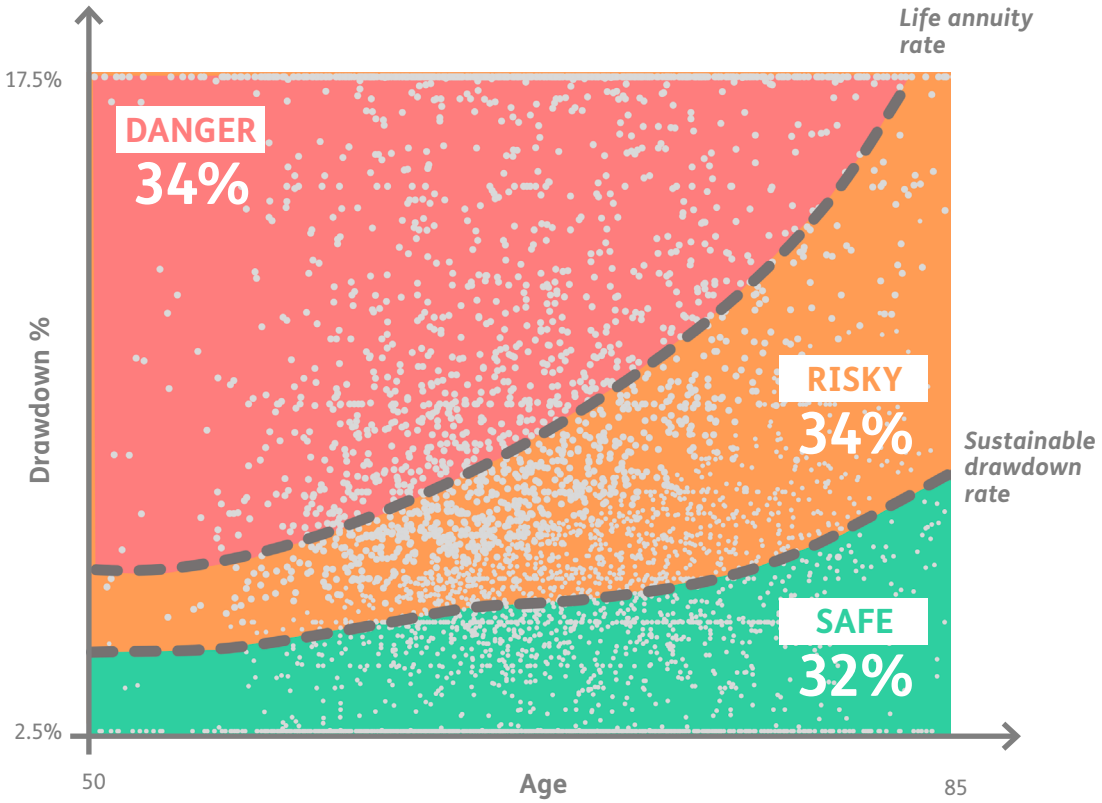
Figure 2: Income sustainability map – zones



The key findings from our composite income sustainability map of 20 000 lives are as follows:

- 32% of annuitants are drawing down at or less than safe drawdown rates. This means 68% are drawing more than they can realistically sustain (shown in Figure 3).
- The average drawdown rate is 8.5%.
- Considering the respective ages and sexes of this group of lives, the average safe drawdown rate should be 5.3% per annum.
- This means that on average, the income shortfall will be more than 15 years.

Figure 3: Percentage of annuitants in the safe, risky and danger zones



Avoiding the living annuity danger zone: how to determine safe drawdown rates

Any client drawing down too much is in danger of running out of money before they die. How can you help them to determine a safe drawdown rate and keep them out of the danger zone?

To answer this, we worked with The Association for Savings and Investment South Africa's (ASISA's) Standard on Living Annuities and the ever-familiar table which shows the number of years before a retirement income will start to reduce under various circumstances (see Table 1). The horizontal rows show different starting drawdown percentages in increments of 2.5%. The vertical columns show different nominal returns, net of all fees.[1] For all scenarios, an inflation of 6% per annum was assumed, which still holds as a reasonable long-term assumption. As expected, the table shows that income lasts longer the lower the drawdown and the higher the return. The ideal scenario is the top right-hand corner.

Table 1: Years before income will start to reduce

Years before your income will start to reduce

		Investment return per annum (before inflation & after all fees)				
		2.50%	*5.00%*	*7.50%*	*10.00%*	*12.50%*
Annual income rate selected at inception	*2.50%*	21	30	50+	50+	50+
	5.00%	11	14	19	33	50+
	7.50%	6	8	10	13	22
	10.00%	4	5	6	7	9
	12.50%	2	3	3	4	5
	15.00%	1	1	2	2	2
	17.50%	1	1	1	1	1

Drawdown

Nominal returns, net of fees

Central assumption: Inflation = 6.0% p.a.

Source: ASISA Standard on Living Annuities (2010)

[1]Nominal returns i.e. including or gross of inflation

To illustrate the difference that a drawdown rate can make, we look at two examples based on the ASISA table. For both examples, and for other examples used in the rest of this document, we have assumed 10% nominal returns. This is a reasonable long-term assumption, given that a 4% real return, net of fees, on top of inflation is a reasonable approximate long-term expectation for typical, balanced funds.

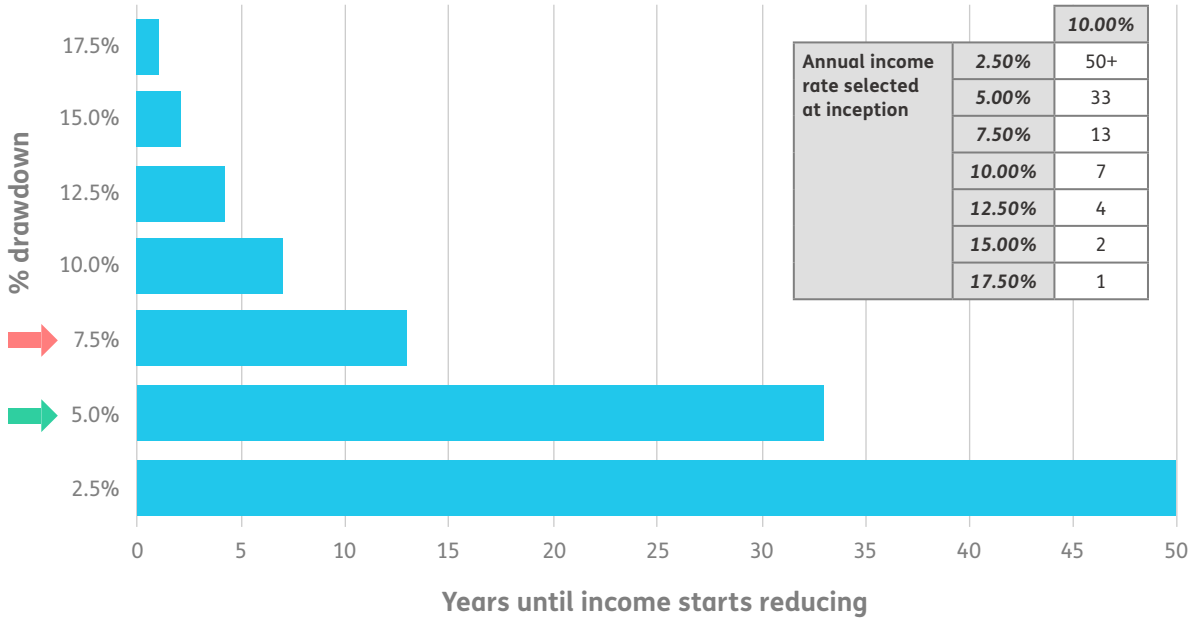
Example 1: If your client starts with a 5% drawdown and increases this by inflation every year, their income will start reducing after 33 years (shown with a green arrow on Figure 4).

Example 2: If your client starts with a 7.5% drawdown and increases this by inflation every year, their income will start reducing after 13 years (shown with a coral arrow on Figure 4).

Drawing down just 2.5% less gives your client an additional 20 years until their income is expected to start reducing.

It is important to note that this is not a 2.5% difference in drawdown but a 50% difference. It is the difference between drawing 5.0% from R1 million (R50 000) and drawing 7.5% from R1 million (R75 000) per year, which is why the outcome of 20 years is so dramatic.

Figure 4: The difference in income longevity for drawdown increments of 2.5%



Annual income rate selected at inception	10.00%
2.50%	50+
5.00%	33
7.50%	13
10.00%	7
12.50%	4
15.00%	2
17.50%	1

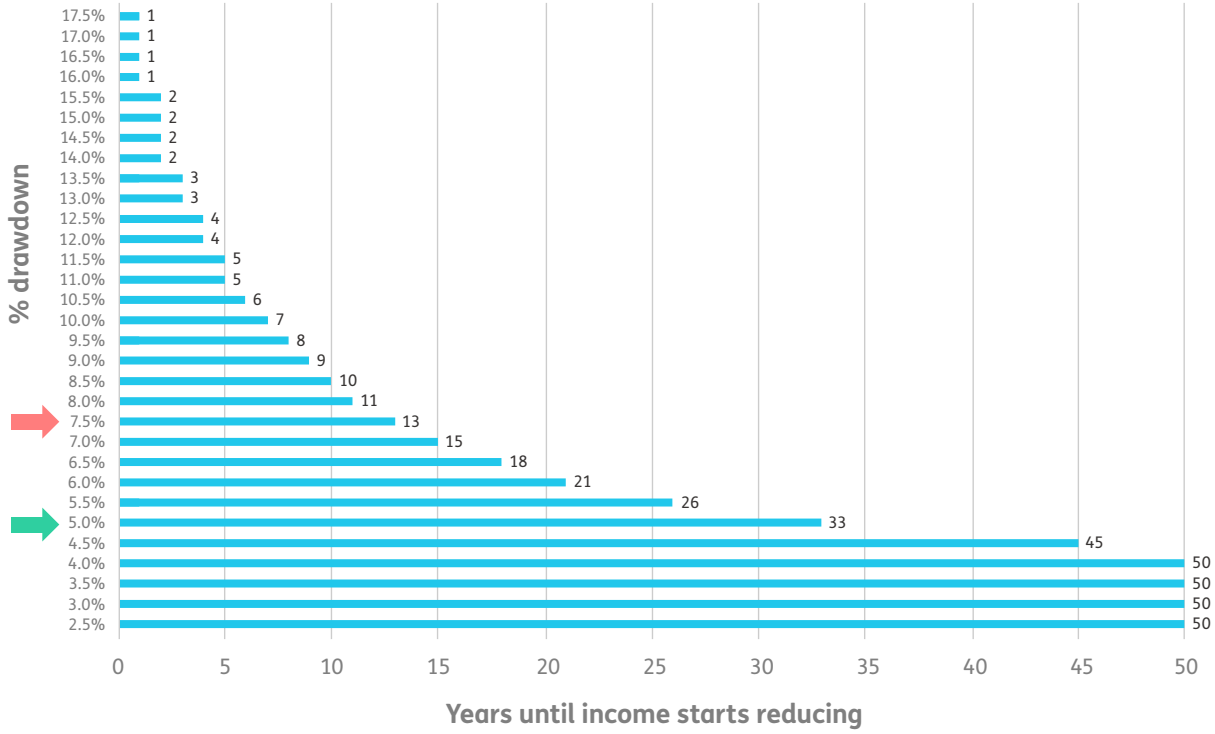
Expanding the ASISA table

One drawback of the ASISA table is that it only shows drawdown levels in increments of 2.5%. The difference between a 5% drawdown and a 7.5% drawdown is quite significant, so it makes sense to zoom in even closer and work with increments of 0.5% to illustrate the devastating effect that even a small increase in drawdown percentage has on a client's income over the long term. To show this, we've used the same calculation method used to determine the original ASISA table.

Figure 5 shows in stark detail the ramifications of a mere 0.5% difference in drawdown rate. For example, while drawing down 5% results in income reducing after 33 years, drawing down 4.5% results in income reducing after 45 years – a significant difference.

One could assume that an income in retirement for 10 years might seem okay, but is it? This will depend largely on the client's age, and we should therefore use this table in conjunction with the probability of survival.

Figure 5: The difference in income longevity for drawdown increments of 0.5%



The importance of factoring in life expectancy

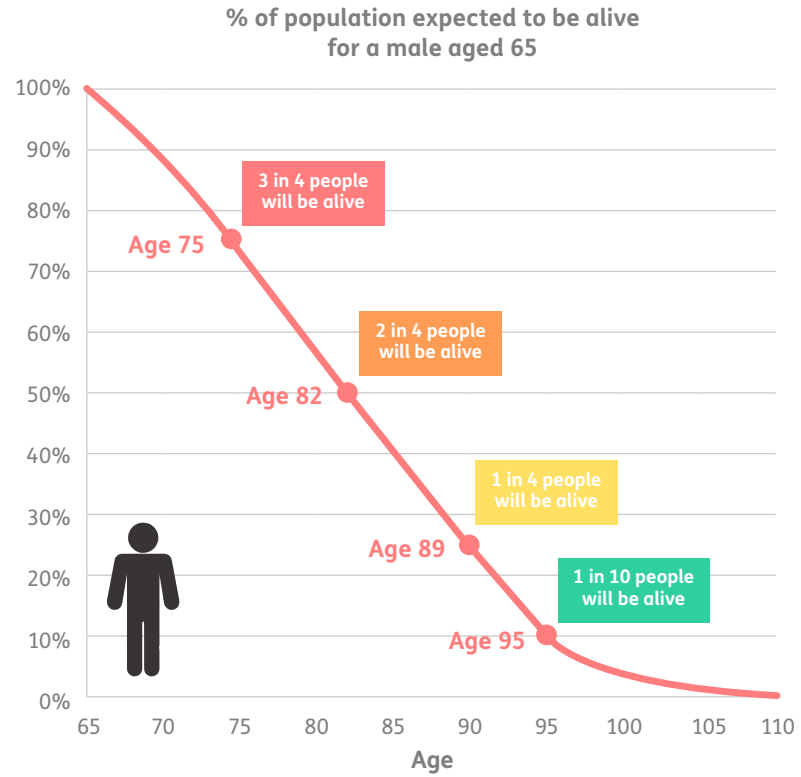
When we look at survival probability curves using standard industry mortality assumptions, we see graphs and numbers such as those in Figure 6a and 6b.

As Figure 6a illustrates, we start with the assumption that 100% of a control group is alive at age 65. Over time, the survival rate starts dropping and the decrease becomes more dramatic. Towards the end there is a flattening because mortality rates are high given the age of this population, but there are fewer and fewer people left at that point. This shape is often called an 'S-curve'.

From this curve we derive various points, such as:

- At age 75, 75% of the male population is expected to be alive.
- At age 82, 50% of the male population is expected to be alive. This is also called average life expectancy.
- At age 89, 25% of the male population is expected to be alive.
- At age 95, 10% of the male population is expected to be alive.

Figure 6a: Survival probability curves for males aged 65

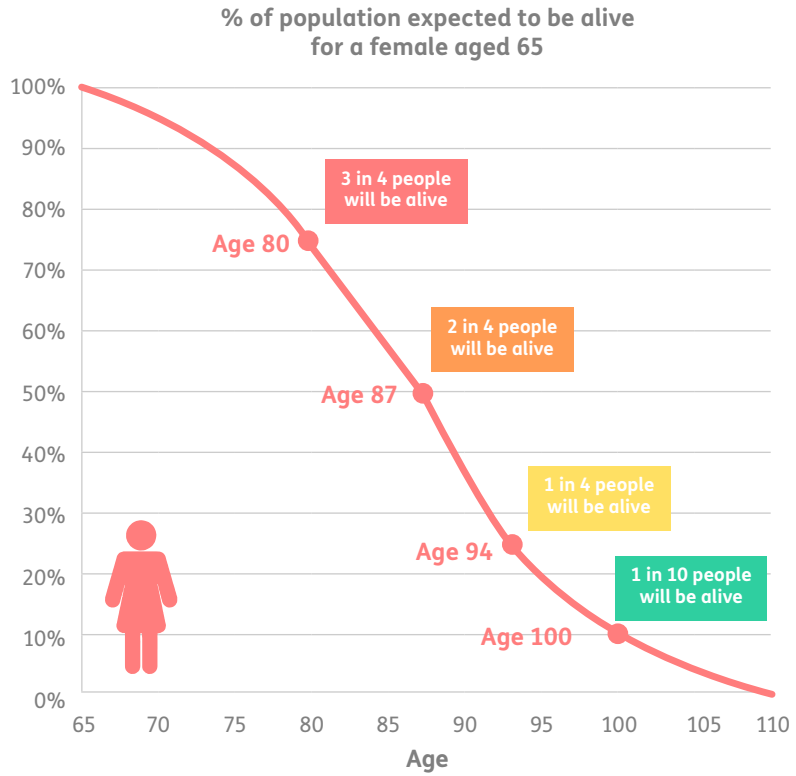


For females, the picture is similar but slightly elongated because their mortality rates are lower:

- At age 80, 75% of the female population is expected to be alive.
- At age 87, 50% of the female population is expected to be alive (average life expectancy).
- At age 94, 25% of the female population is expected to be alive.
- At age 100, 10% of the female population is expected to be alive.

This brings us to a crucial point: financial planning should cater to age 95 for males and age 100 for females. There is a 10% chance of a client living beyond those points. A client's financial plan cannot only cover the years up to average life expectancy. That would be the same as planning for only half the population. Put differently, there's a 50% chance that a person will live longer than their life expectancy, and you should plan accordingly.

Figure 6b: Survival probability curves for females aged 65

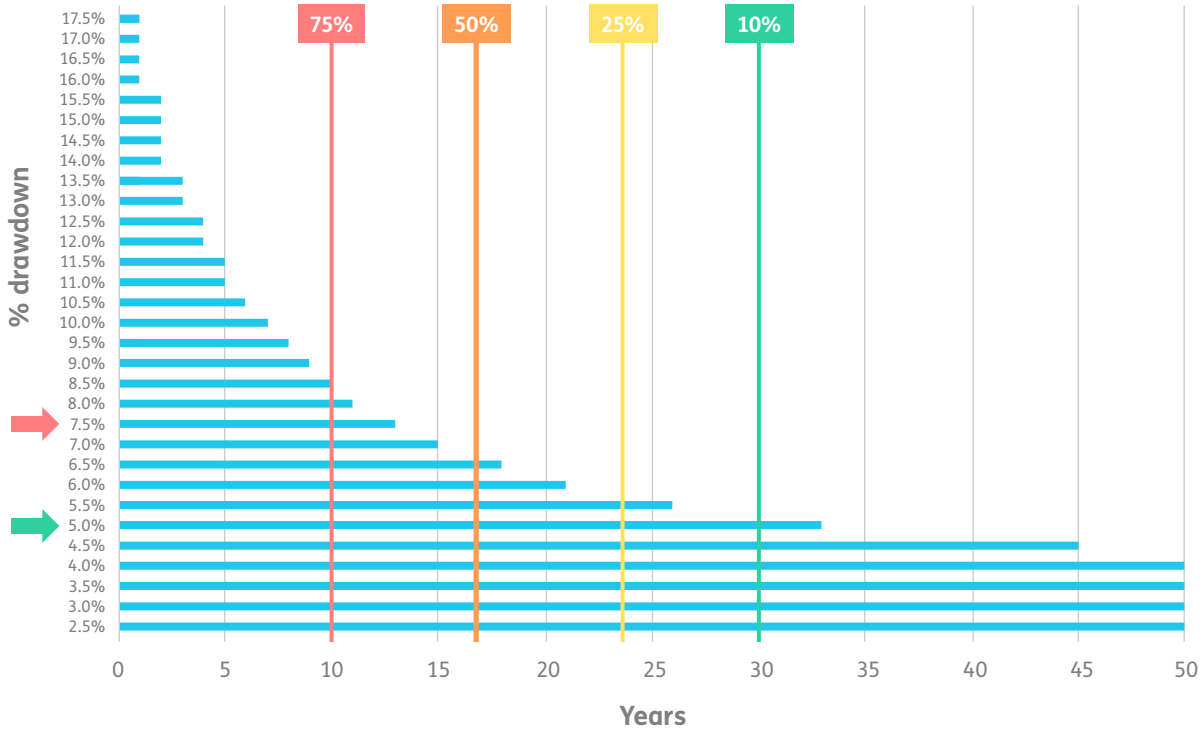


Combining drawdown levels and survival probability

Plotting the probabilities of survival for a male aged 65 against the expanded ASISA table (years until income will start to reduce) is shown in Figure 7.

Note that this is for single males. If a spouse is added, all lines will move to the right because joint life expectancy is assumed to be longer than a single life expectancy.

Figure 7: Drawdown levels in increments of 0.5% versus survival probability for a male aged 65

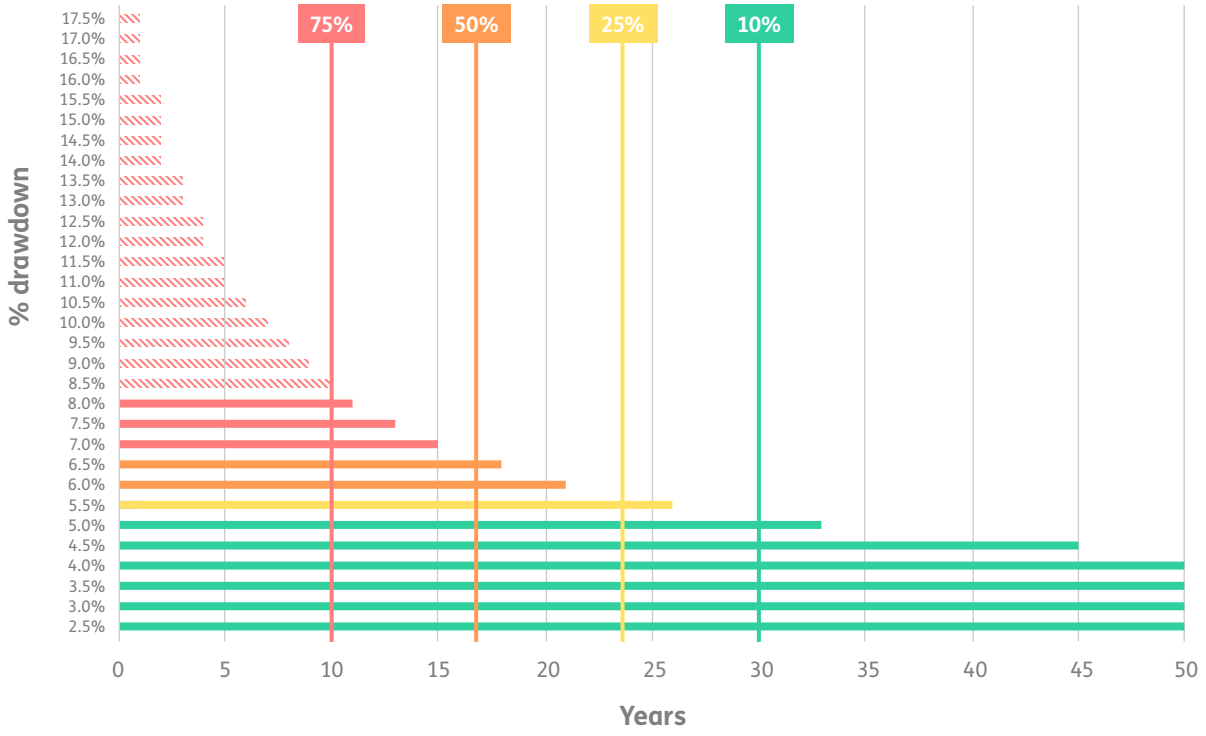


We can extrapolate further detail. Figure 8 shows:

- For drawdowns of 8.5% and higher (shown in chevron white and pink) the number of years until income reduces is at or below 10. This means we would expect that for more than 75% of lives (males aged 65) income will start to reduce while they are still alive.
- For drawdowns in the range of 7% to 8% (shown in coral) the number of years until income reduces is below 17. This means we would expect that for more than 50% of lives (males aged 65) income will start to reduce whilst they are still alive.
- For drawdowns in the range of 6% to 6.5% (shown in orange), the number of years until income reduces is below 23. This means we would expect that for more than 25% of lives (males aged 65) income will start to reduce whilst they are still alive.
- For drawdowns at 5.5% (shown in yellow), the number of years until income reduces is below 30. This means we would expect that for more than 10% of lives (males aged 65) income will start to reduce whilst they are still alive.
- For drawdowns below 5.5% (shown in green) the number of years until income reduces is more than 30. This means that at drawdown levels below 5.5% we would expect income will start to reduce for less than 10% of annuitants whilst they are still alive.

The green zone is where clients should be for a realistic probability of enough income for life.

Figure 8: Extrapolation of drawdown levels versus survival probability for a male aged 65



A handy rule of thumb

Back to our question of how you can help clients determine a safe drawdown rate.

A rule of thumb: Read off the ASISA table what drawdown percentages will take your client beyond age 95 for males and age 100 for females – in other words, where current age plus number of years at which income will reduce is greater than age 95 or 100.

To show that this rule of thumb is reasonable, we look at the outcome reached by an ASISA working group who determined safe drawdown rates by using scenario modelling. These calculations considered:

1. The level of income sustainability at various durations under different scenarios, modelled using Monte Carlo simulations (the economic scenario)
2. The probability of survival at different ages and sexes (the mortality scenario)
3. Where the initial drawdown percentage gives reasonable outcomes considering these economic and mortality scenarios.

The outcome is a table of sustainable drawdown rates, shown in Table 2.

Table 2: Sustainable drawdown rates

Age	Males	Females
55	4.5%	4.0%
60	5.0%	4.5%
65	5.5%	5.0%
70	5.5%	5.0%
75	6.0%	5.5%
80	7.0%	6.0%
85	8.0%	7.0%

Source: Financial Services Conduct Authority (FSCA) draft criteria for living annuities in a default annuity strategy (2018)

The sustainable drawdown rates range from 4% to 8%, and they increase by age as expected. Rates for single males are higher than for single females, by 0.5% to 1% depending on age. For joint lives, the rule states that you must select the lowest of the two partners' sustainable drawdown rates and subtract 0.5% (to allow for joint survivorship).

We mapped these sustainable drawdown rates against the ASISA table, starting with males.

Drawing three examples from Figure 9 shows us the following:

- At age 55, the sustainable drawdown rate is 4.5%. At that drawdown percentage, the ASISA table shows that a male client's income will reduce after 45 years, taking their planning safely past age 95 to the age of 100.
- At age 75, the sustainable drawdown percentage is 6%, which gives a male client 21 years until income reduces, taking their planning safely past age 95 to the age of 96.
- At age 85, the sustainable drawdown rate is 8%, which would give a male client 11 years until income reduces, taking their planning safely past age 95 to the age of 96.

Figure 9 clearly shows that the sustainable drawdown rates map very well to the rule of thumb.

Figure 9: Mapping sustainable drawdown rates in a living annuity to the ASISA table (males only)

Age	Males	Females
55	4.5%	4.0%
60	5.0%	4.5%
65	5.5%	5.0%
70	5.5%	5.0%
75	6.0%	5.5%
80	7.0%	6.0%
85	8.0%	7.0%

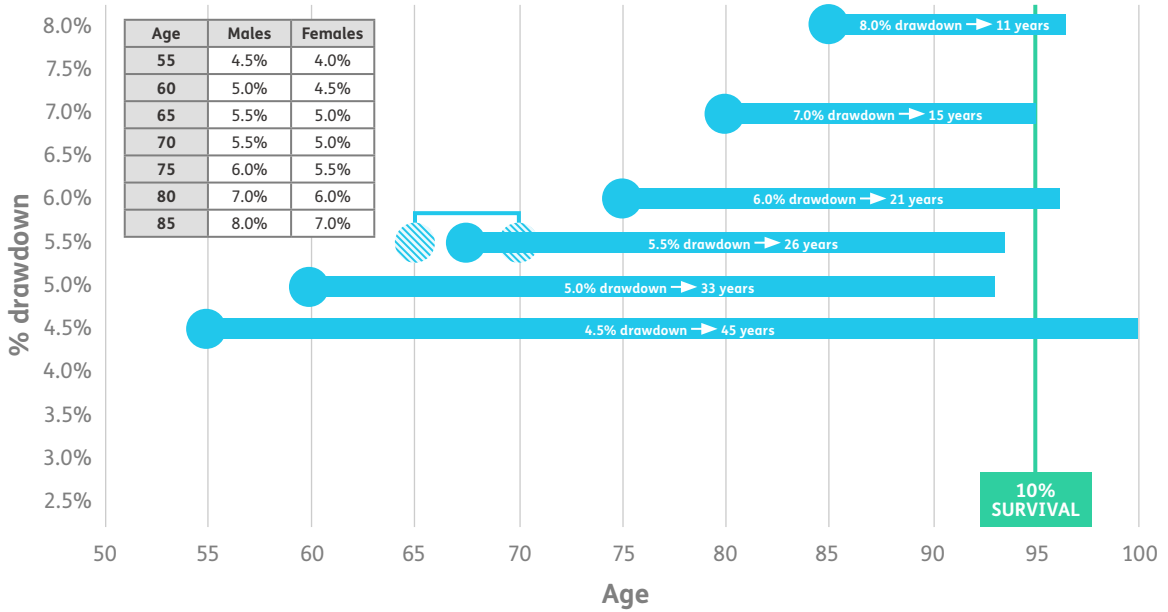


Figure 10 shows us the picture for females. Here we are aiming for 100 years instead of 95, so the recommended drawdown rates are lower.

Drawing three examples from Figure 10 shows us the following:

- At age 55, the sustainable drawdown rate is 4.0%. At that drawdown percentage, the ASISA table shows that a female client's income will reduce after 50 years, taking their planning safely past age 100 to the age of 105.
- At age 75, the sustainable drawdown percentage is 5.5%, which gives a female client 26 years until income reduces, taking their planning safely past age 100 to the age of 101.
- At age 85, the FSCA sustainable drawdown rate is 7%, which would give a female client 15 years until income reduces (according to the ASISA table), taking their planning safely to age 100.

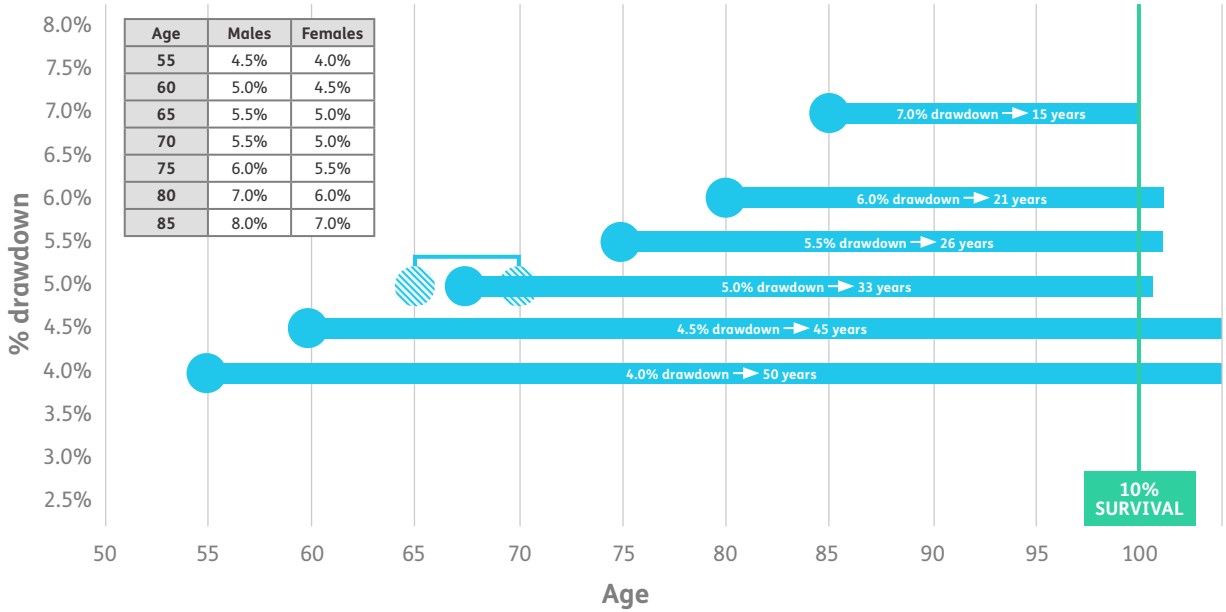
We see once more that using the FSCA recommended drawdown rates for females is very consistent with the rule of thumb.

In summary, to help clients determine a sustainable drawdown rate, you can use either of the following two methods:

1. Refer to the ASISA table and associated drawdown percentage which results in the number of years until income reduces, going beyond age 95 for males or age 100 for females.
2. Refer to the FSCA's draft of recommended sustainable drawdown rates for living annuities.

Figure 10: Mapping sustainable drawdowns to the ASISA table (females only)

Age	Males	Females
55	4.5%	4.0%
60	5.0%	4.5%
65	5.5%	5.0%
70	5.5%	5.0%
75	6.0%	5.5%
80	7.0%	6.0%
85	8.0%	7.0%



Why annuity rates are higher than safe drawdown rates

Now that we have established what reasonable safe drawdown rates are, let us compare these to the level of income obtainable from a life annuity.

A client in a pure living annuity is self-insured from a longevity point of view. As we've seen, it is therefore best to plan financially up to age 95 for males and 100 for females. This means that, for example, for males aged 65 the initial drawdown should be 5.5% per year. However, when investing in a life annuity, the pooling of risks means those who live longer than expected are subsidised by those who die earlier. The initial income can be set at the level which is appropriate for the average scenario.

This means that, for example, the initial income percentage for a single male age 65 is 8.5%, which is quite a bit higher than the 5.5% sustainable drawdown rate, as shown in Figure 11. Thus, if we compare a living annuitant's current drawdown rate to these two levels, we get an accurate picture of how risky that client's drawdown strategy is.

Figure 11: Sustainable drawdown rates versus life annuity rates for a single male aged 65

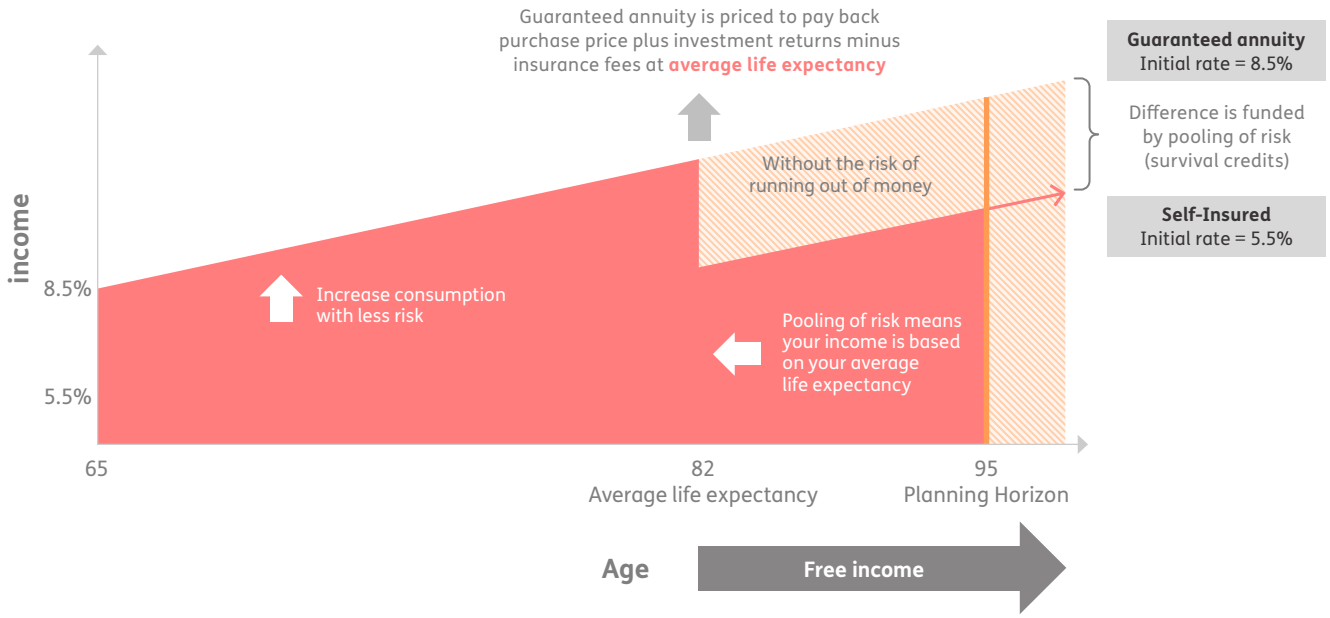


Table 3 shows how life annuity rates for males and females at various ages compare to recommended drawdown rates.

With a good understanding of survival probability and sustainable drawdown rates versus life annuity rates, we can now revisit the three zones of our income sustainability map and recommend solutions for each.

Table 3: Sustainable drawdown rates versus life annuity rates

	Sustainable income from life annuity		Sustainable income from living annuity (FSCA)	
Age	**Male**	**Female**	**Male**	**Female**
55	6.0%	5.0%	4.5%	4.0%
60	7.0%	6.0%	5.0%	4.5%
65	8.5%	7.0%	5.5%	5.0%
70	10.0%	8.5%	5.5%	5.0%
75	12.5%	10.0%	6.0%	5.5%
80	15.5%	13.0%	7.0%	6.0%
85	20.0%	16.5%	8.0%	7.0%

Optimal retirement income strategies per zone

Here we show again the figure illustrating the three zones, this time with an income solution given for each zone.

Danger zone

Income solution: Annuitise
This is the zone that clients should avoid because there is a high probability that they will run out of money. However, those who fall into this zone could fully annuitise, which will give them a guaranteed income for the rest of their lives. But clients in this zone will need to reduce their expenditure, especially if they are drawing at levels far above the coral line.

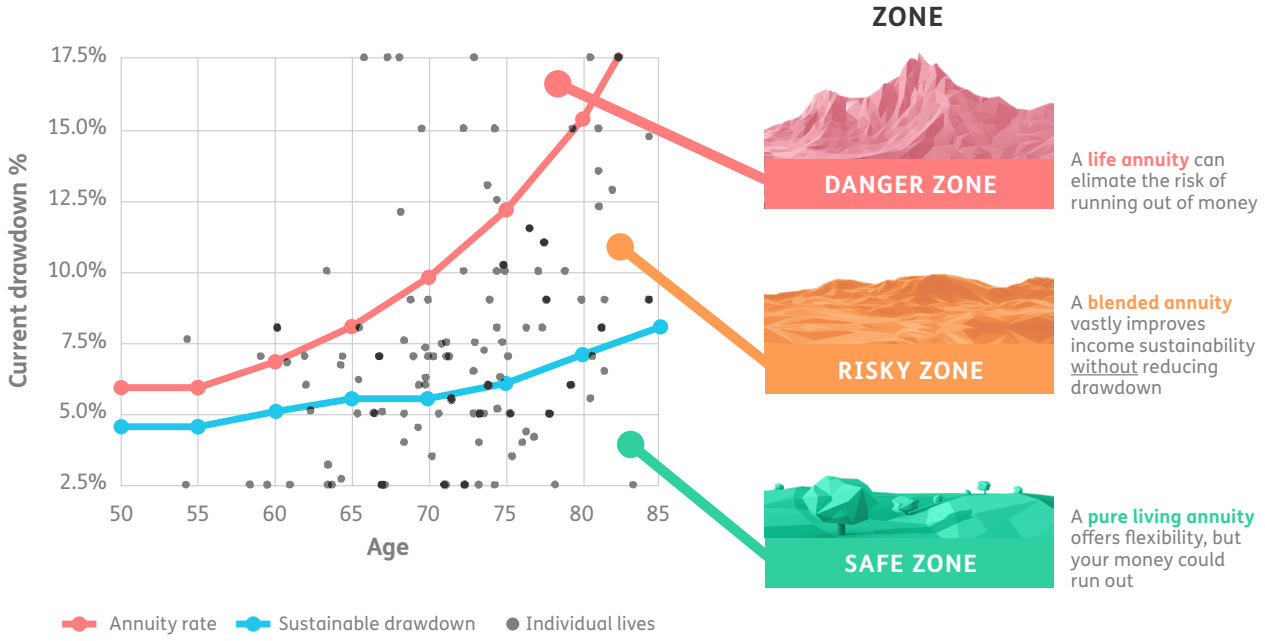
Risky zone

Income solution: Blend
Here, where people are drawing down between the sustainable drawdown rate and the maximum possible life annuity rate, we see potentially unsustainable drawdown strategies. However, blending a living annuity with a life annuity (see How blended annuities can help those in the risky zone) can provide a drawdown strategy which is acceptable overall, as the life annuity component provides an income safety net and reduces the net drawdown rate from the flexible assets.

Safe zone

Income solution: Pure living annuity
Here, a client is drawing down less than the sustainable drawdown rate and therefore has a sustainable drawdown strategy. For this zone, a pure living annuity offers great flexibility, but there is still a level of risk that their money could run out. This is, however, an acceptable level of risk.

Figure 12: Solutions per zone for optimal retirement income



How blended annuities can help those in the risky zone

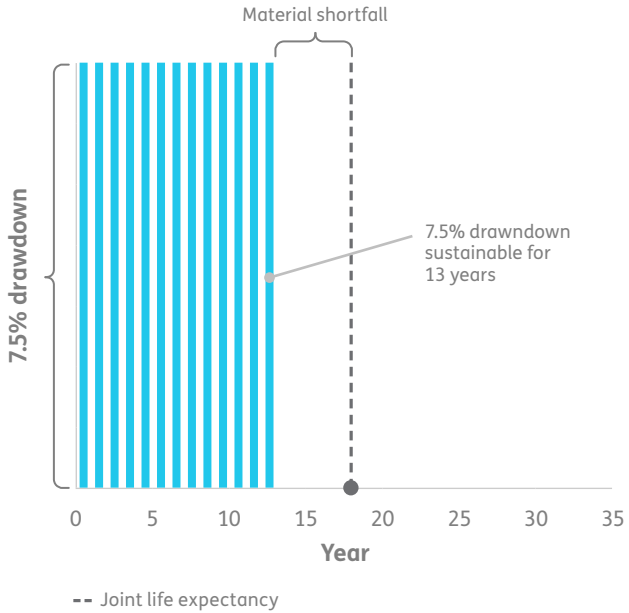
A blended annuity is a combination of a living annuity and a guaranteed life annuity. This approach to retirement income planning is known as 'blending'. Blending offers the ability to partially annuitise inside a living annuity, thereby allowing an annuitant to balance a sustainable income for life and discretionary living annuity investments. Let us consider two examples to explain the effect of blending on retirement income, based on a typical retired couple, male age 75 and female age 72.

Example 1

The couple's current and required drawdown is 7.5% per year, shown in Figure 13 as a blue bar. 0% is invested in a life annuity. According to the ASISA table, income is expected to start reducing in 13 years. However, their joint remaining life expectancy is 17 years, which leaves a material shortfall.

Figure 13: Before blending; drawdown not sustainable

Visual representation
Pure living annuity



ASISA table
With reference to ASISA table, assuming 10% returns

Annual income rate selected at inception	Investment return per annum (before inflation; after fees)				
	2.5%	5%	7.5%	10%	12.5%
2.5%	21	30	50	50	50
5%	11	14	19	33	50
7.5%	6	8	10	**13**	22
10%	4	5	6	7	9
12.5%	2	2	3	4	5
15%	1	2	2	2	2
17.5%	1	1	1	1	1

Example 1

- Male aged 75; female aged 72
- Required drawdown = 7.5% p.a.
- 0% in life annuity

Example 2

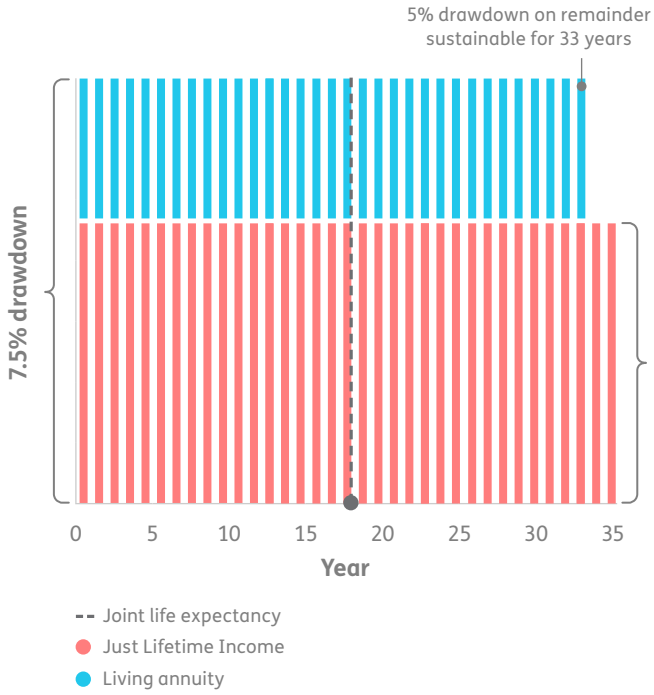
Figure 14 shows the results of blending. 50% is invested in a life annuity, and the remainder is invested in a living annuity.

The life annuity component provides a 10% income rate for these ages. And that's the approximate actual rate for a couple of these ages, which lasts for however long they live.

Because they are getting 10% from the life annuity, they only need to effectively draw down 5% on the remainder to get their combined drawdown of 7.5%. This means that, referring to the ASISA table again, their income on the living annuity portion is expected to only start reducing in 33 years. The overall drawdown strategy is now fully sustainable. Furthermore, with the living annuity component they retain flexibility and do not have to reduce the overall drawdown percentage to maintain their level of income.

Figure 14: After blending, with a life annuity – same drawdown now sustainable

Visual representation
Blended living annuity with 50% in life annuity



ASISA table
With reference to ASISA table, assuming 10% returns

Annual income rate selected at inception	Investment return per annum (before inflation; after fees)				
	2.5%	5%	7.5%	10%	12.5%
2.5%	21	30	50	50	50
5%	11	14	19	33	50
7.5%	6	8	10	13	22
10%	4	5	6	7	9
12.5%	2	2	3	4	5
15%	1	2	2	2	2
17.5%	1	1	1	1	1

Example 2

- Male aged 75; female aged 72
- Required drawdown = 7.5% p.a.
- 50% in life annuity

Benefits of blending

In summary, the benefits of blending are as follows:

- Blending is an effective way of managing and reducing investment and longevity risk.
- A minimum level of income – guaranteed for life – is added, which can never reduce.
- This guaranteed income can be used to cover essential expenses and/or to reduce the effective drawdown on the remainder.
- A client can protect a spouse/ partner by adding a spouse's income benefit or a guarantee period (minimum payment period).
- A lumpsum legacy or inheritance is maintained – for as long as the liquid portion remains.
- A client maintains the same flexibility in terms of the overall level of drawdown they want to take from the living annuity.

Conclusion

A good understanding of sustainable drawdown rates is critical to be able to advise clients on how much they should be drawing down in retirement.

The ASISA table together with the rule of thumb, or the relevant sustainable drawdown rate according to age and sex, gives a framework for determining the level of risk of a particular drawdown strategy.

Comparing the required drawdown rate to sustainable drawdown rates and life annuity rates gives a useful tool – called an income sustainability map – which tells you what the optimal retirement income solution is for your client: a pure living annuity, a life annuity, or a blended living annuity.

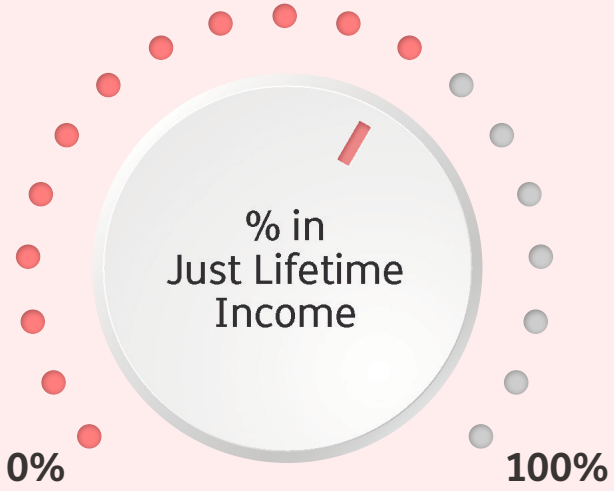
Click here for more information about Just SA's full range of retirement income solutions.

How much to blend?

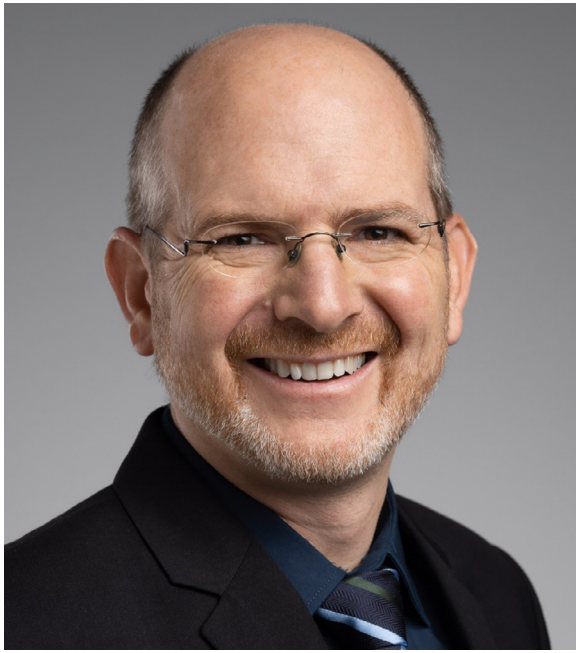
To help tailor individual blends, Just SA created a benchmark blend framework. It provides a guideline to help you calculate an appropriate amount to be allocated to the life annuity component depending on your client's needs and circumstances.

Visit our website to learn more about how much to blend.

If you'd like to chat to a consultant about how much to blend, please email info@justsa.co.za



About the author



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Head of Distribution, Just Retirement Life (South Africa) Limited

Bjorn has over 20 years' local and international experience in the insurance industry, which includes seven years' reinsurance experience in longevity risk. Bjorn's exposure to the insurance markets of South Africa, the UK, Ireland, Germany and Switzerland complements his depth of expertise in the pricing, design and structuring of enhanced annuities and longevity swaps. He is a qualified actuary and has held positions at Old Mutual, Hannover Re, PartnerRe and Medscheme.

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