



Decumulation Rules of Thumb: An Update

by the Retirement Income Interest Group of the New Zealand Society of Actuaries

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Introduction

In 2017 the Retirement Income Interest Group (RIIG) of the New Zealand Society of Actuaries (NZSA) published a paper on Rules of Thumb for decumulating retirement savings¹. Earlier work carried out by the RIIG² concluded that a guidance focus was more appropriate than a product focus for addressing New Zealanders' retirement income needs. However, not all people want nor can afford professional financial advice. Rules of Thumb can help bridge the advice gap by providing a reliable steer that is tested, up to date and based on expert knowledge, and can help to take some of the fear out of decision-making.

The aim of our original Rules of Thumb paper was to provide some guidance for New Zealanders on ways to draw from their retirement savings pool, what level of income that might provide, and how long it might last. This was done by modelling four different Rules of Thumb, which were:

Rule of Thumb	How it works
6% Rule: Each year, take 6% of the starting value of your retirement savings.	You receive the same nominal amount each year but the length of time you receive it for varies.
Inflated 4% Rule: Take 4% of the starting value of your retirement savings, then increase that amount each year with inflation.	You receive the same real amount (i.e. inflation adjusted) each year but the length of time you receive it for varies.
Fixed Date Rule: Run your retirement savings down over the period to a set date – each year take out the current value of your retirement savings divided by the number of years left to that date.	The amount you receive each year varies but the length of time you receive it for is known.
Life Expectancy Rule: Each year take out the current value of your retirement savings divided by the average remaining life expectancy at that time.	You receive a payment each year until you die but the amount varies.

¹ RIIG (2017), [Decumulation Options in the New Zealand Market: How Rules of Thumb Can Help](#), New Zealand Society of Actuaries

² RIIG (2015), [Income Streaming in Retirement: Options for New Zealand](#), New Zealand Society of Actuaries

The RIIG believes that it is timely to revise our earlier work for the following reasons:

- interest rates and expected returns on investment assets have declined significantly since 2017, and are generally expected to stay lower for longer,
- our recent paper on longevity³ suggests that New Zealander retirees should in general be planning to live until age 90 to 95, with those who are currently younger expected to live longer than those who are currently older, on average,
- both of the above will reduce the level of income we can expect to draw from our savings and/or the sustainability of that income, compared to expectations in our earlier paper, and
- there is more focus on decumulation as new regulations require KiwiSaver providers to illustrate retirement income levels, assuming income is drawn to age 90⁴.

In the remainder of this paper we present refreshed illustrations of retirement income levels under each Rule of Thumb with commentary. In line with our own work on longevity and the new regulations, we have updated the Fixed Date Rule to extend income from 20 years (assumed in 2017) to 25 years, illustrating with the period from age 65 to 90.

This paper finds that the combined effects of lower expected returns and improved longevity result in reduced income levels and/or funds running out earlier. Incomes available from retirement savings now look less like a 'pension for life'. The implications are clear: those planning on drawing down income from retirement saving may well have to reconsider how much income they can expect and adjust their planned drawdown settings to meet a revised income plan.

The members of RIIG who authored this paper are Daniel Mussett (Convenor), Fraser McKay, Alison O'Connell, Christine Ormrod, Janet Shirley, Kelvin Prisk and Simon Ferry. This paper represents the collective personal views of the members of the RIIG and does not necessarily reflect the positions of our employers or other members of the New Zealand Society of Actuaries. Any errors are our own.

Importantly, the contents of this paper do not constitute financial advice. The RIIG encourages individuals to seek professional financial advice from an accredited adviser before taking any financial decisions relating to their retirement savings.

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Citation:

RIIG (2020), *Decumulation Rules of Thumb: An Update*, New Zealand Society of Actuaries

³ RIIG (2019), [Longevity in New Zealand: Implications for Retirement Income Policy](#), New Zealand Society of Actuaries

⁴ See <http://www.legislation.govt.nz/regulation/public/2019/0104/latest/whole.html#LMS146457>

Rules of Thumb – Income Profiles

The modelled income profiles are shown in the charts below based on our updated assumptions, which are described in the Appendix to this paper. We provide comments on how the income profiles have changed since the results we presented in 2017. First, some guidance on interpreting the charts.

How to read the charts

The charts show potential income patterns if you follow each Rule. They provide a guide to how long you might live, so you can see the chances of running out of money before you die.

- The income shown is the income starting to be drawn down at age 65 from an initial fund of \$100,000 and does not include any other income you might have such as from New Zealand Superannuation. The figures are based on forward-looking investment conditions for a 'conservative' investment profile (see Appendix).
- The income shown is adjusted for inflation. This is why the first Rule, which provides a flat income of \$6,000 per annum, appears to fall over time. The \$6,000 will buy less over time due to inflation. The second Rule, which provides an amount that increases with inflation each year, appears flat for the same reason. If the income looks level from one year to the next, that means it will be a higher number of dollars in future but have the same spending power as today.
- As investment returns in the future are uncertain, the income you will receive is uncertain. The **dark blue** bars show income that you will almost certainly receive (95% probability of receiving income up to this level), the **mid-blue** bars show additional income you will probably receive (50% chance i.e. equal chances of receiving income above or below this level – referred to as the median income) and the **light blue** bars represent further income you might receive (5% probability of receiving income up to these levels).
- The grey horizontal bars show the probability of surviving from age 65 to the age where the colour of the blue bars change, allowing for typical New Zealand population longevity.

These Rules are designed specifically for the New Zealand environment and shown for a general case of someone aged 65 with \$100,000 invested in a conservative investment fund.

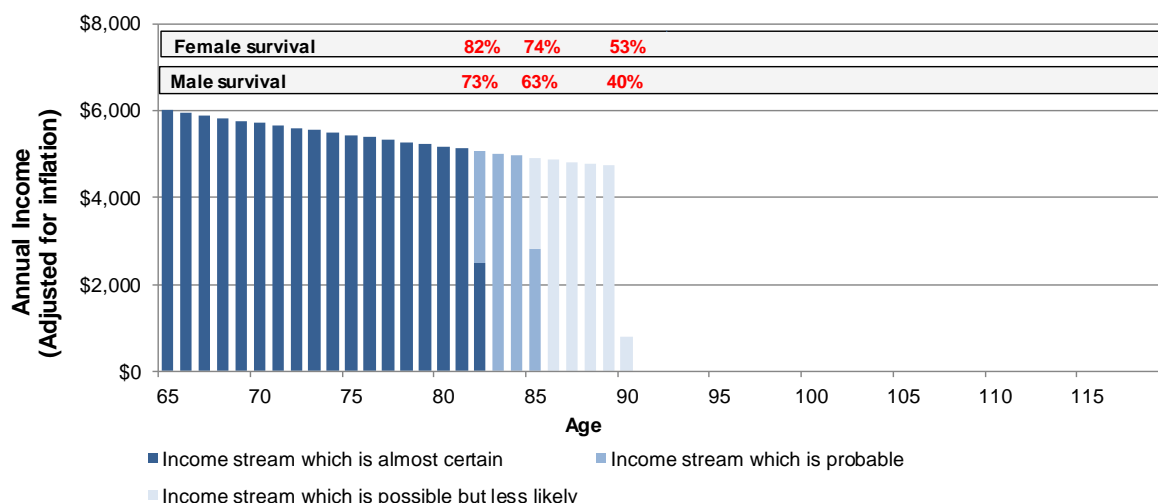
We stress that it is important for those drawing on their retirement savings to consider their own personal situation. Individual circumstances are likely to differ from those modelled. If your circumstances are more complicated, or you have a lot more invested (especially in more risky savings), or you are older or younger than this, then you may still be interested in using these Rules. Whatever your circumstances, you may wish to speak to a financial adviser.

Remember:

- You can take less in any year if you don't need the money, but if you take more, then your savings are more likely to run out and you should recalculate.
- The graphs on the following pages estimated future income at a point in time (age 65). Your future income profile will vary, so you should review your choice every five years, and at any time if your circumstances change

Rule 1: 6% Rule

Conservative fund, starting age 65, starting fund \$100,000

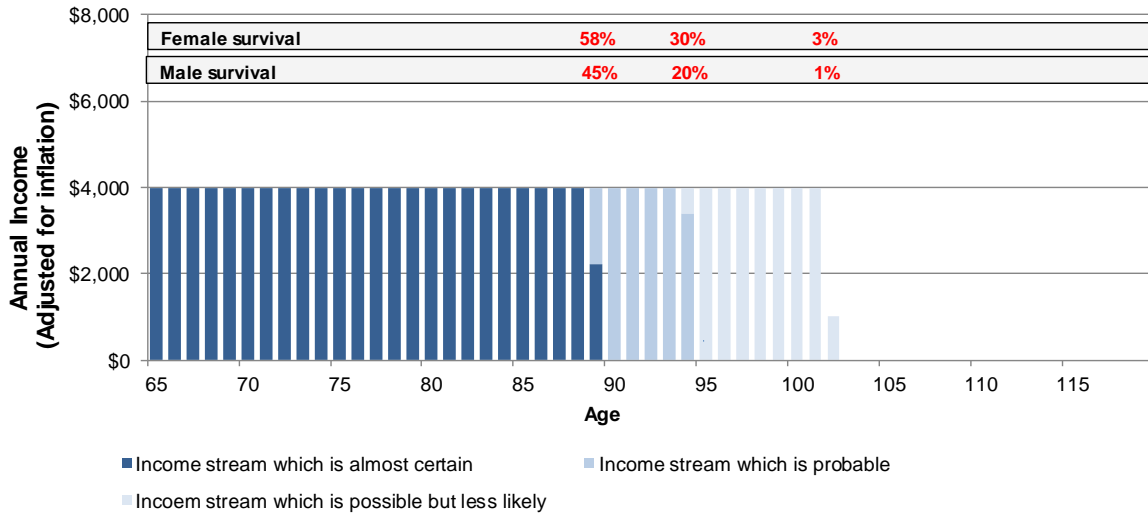


Under this Rule there is a 50% chance that income will last up to age 85 (Income stream which is probable), and 74% of females and 63% of males are expected to survive to this age. The period for which income can be drawn has reduced by four years since our 2017 results, reflecting the lower expected investment return on savings. Consequently, there is now a higher chance that the individual will outlive their savings. To achieve even chances of income lasting to age 88, as seen in our 2017 paper, an income of around 5% of the initial balance each year would need to be drawn, rather than 6%.

Rule of Thumb	Most suitable for	Pros	Cons
6% Rule: Each year, take 6% of the starting value of your retirement savings.	People who want more income at the start of their retirement, to “front-load” their spending, and are not concerned with inheritance.	Very simple: Known, regular income.	Income will not rise with inflation. Risk of retirement savings running out within lifetime.

Rule 2: Inflated 4% Rule

Conservative fund, starting age 65, starting fund \$100,000

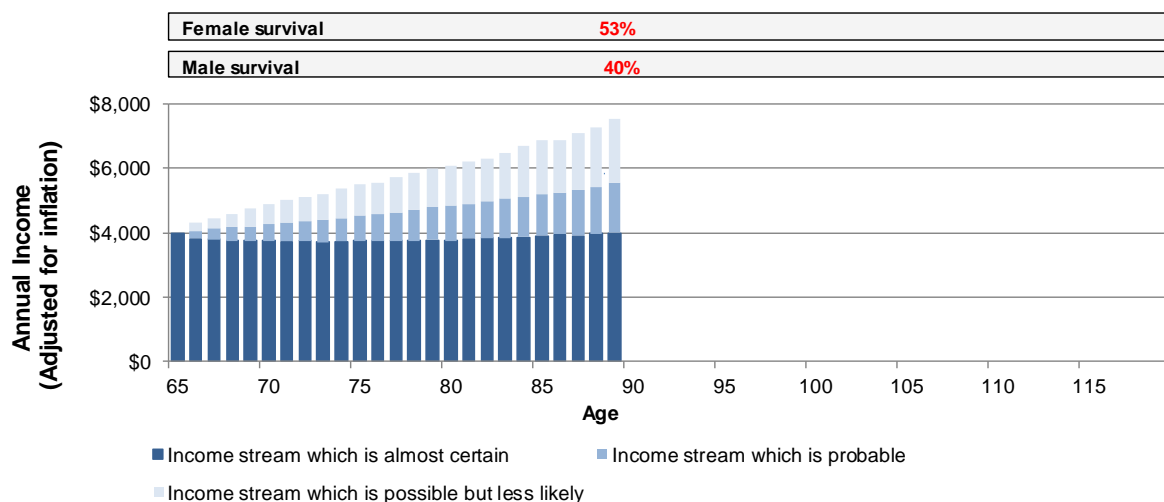


Under this Rule there is a 50% chance that income will last up to age 94 (Income stream which is probable), and 30% of females and 20% of males are expected to survive to this age. The projected income period has reduced more under the Inflated 4% Rule than the 6% Rule since our 2017 results: by eight years at the median. As with the 6% Rule, we also see significantly increased chances that individuals will outlive their savings (now 30% for females versus 2% in our prior work). However, outliving savings remains much less likely for the Inflated 4% Rule than for the 6% Rule.

Rule of Thumb	Most suitable for	Pros	Cons
Inflated 4% Rule: Take 4% of the starting value of your retirement savings, then increase that amount each year with inflation.	People worried about running out of money in retirement or who want to leave some inheritance.	Fund likely to last near to a full lifetime. Income will rise with inflation.	Lower income than other options.

Rule 3: Fixed Date Rule (25 years)

Conservative fund, starting age 65, starting fund \$100,000

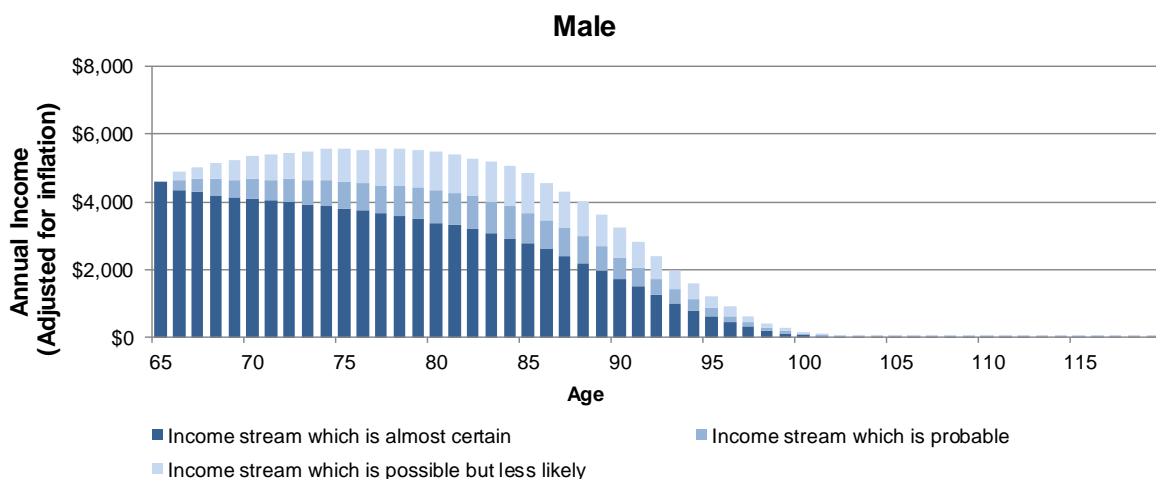
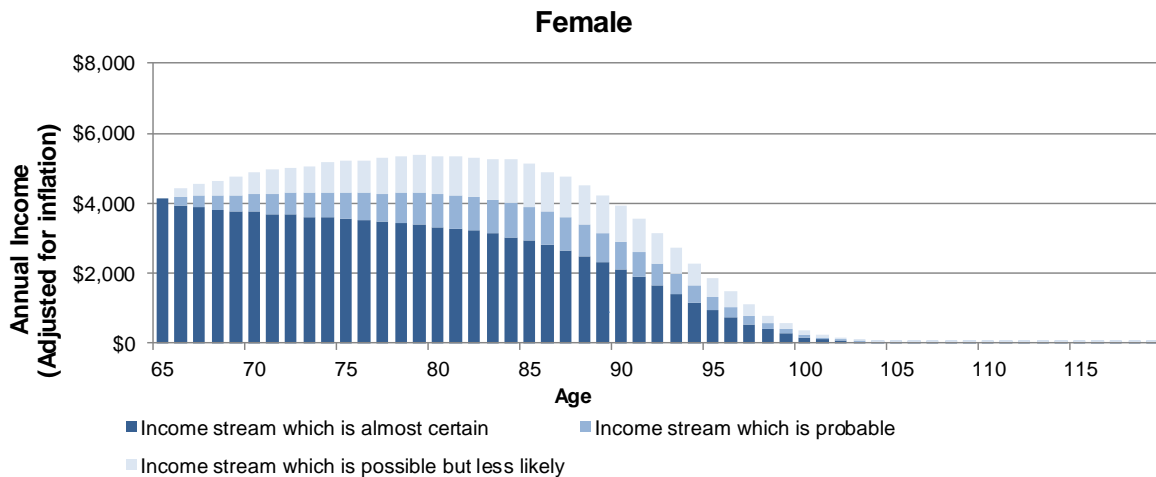


Income is drawn so that it is run down until age 90 under this Rule. Females have a 53% chance of surviving to this age and males 40%. This Rule is not directly comparable with our 2017 results, as the fixed period has been increased from 20 to 25 years. This means an income 20% lower than modelled in 2017 is expected, due to the longer period for which the income is drawn.

Rule of Thumb	Most suitable for	Pros	Cons
<p>Fixed Date Rule: Run your retirement savings down over the period to a set date – each year take out the current value of your retirement savings divided by the number of years left to that date.</p>	<p>People comfortable with living on other income (for example New Zealand Superannuation) after the set date. Those wanting to maximise income for most of their life and not concerned with inheritance.</p>	<p>Income for a known selected period.</p>	<p>Amount of income varies from year to year. Annual calculation necessary.</p>

Rule 4: Life Expectancy Rule

Conservative fund, starting age 65, starting fund \$100,000



Income is initially drawn so that it lasts for the individual's expected lifetime after age 65, being 89 for women and 87 for men. If the individual lives longer than initially expected income is adjusted but may be very low in later years. Due to lower investment return expectations in 2020, a lower income is expected. In 2017 a more substantial increase in income was seen until age 85 before falling away rapidly thereafter. A flatter level of income (or very mild increases) is now expected until age 80–85.

Rule of Thumb	Most suitable for	Pros	Cons
<p>Life Expectancy Rule: Each year take out the current value of your retirement savings divided by the average remaining life expectancy at that time.</p>	<p>Those wanting to maximise income throughout life and not too concerned with inheritance.</p>	<p>Efficient use of fund to provide income for whole of life.</p>	<p>Amount of income varies from year to year; low in later years. Annual calculation necessary and relatively more complicated.</p>

Conclusion

The combined effects of lower expected returns and improved longevity result in income levels reducing and funds running out earlier. The profiles of income available from retirement savings now look less like a 'pension for life'. The implications are clear: those planning on drawing down income from retirement saving may well have to reconsider how much income they can expect and adjust their planned drawdown settings to meet a revised income plan.

Generating a more sustainable income

Younger people may have the flexibility to save more, but those at or near retirement may have little to no ability to do so. However, there are still ways in which retirees can adjust drawdown settings with a view to generating a more sustainable income.

1. Starting older

We have modelled this by assuming drawdown begins now for those currently aged 70 rather than beginning now for those currently aged 65, with the starting fund remaining at \$100,000. Under the Fixed Date Rule, we have modelled reducing the fixed period to 20 years, so that savings are still run down to age 90.

- 6% Rule: income starts now for those five years older, so the median income level is higher at age 90 years of age. 52% of females and 39% of males are expected to survive from age 70 today to age 90.
- 4% Inflated Rule: median income level is higher at age 99 years of age. 8% of females and 4% of males are expected to survive this long from age 70 today, so most people are very unlikely to outlive their savings under this scenario.
- Fixed Date Rule: median income level 15-20% higher over the 20-year period from now to age 90 than the 25-year period from age 65 today to age 90. There is also a marginally higher chance of surviving the drawdown period to 90.
- Life Expectancy Rule: median income level is 15-25% higher.

2. Increasing investment risk thereby increasing expected returns

We have modelled this by assuming the fund, starting age 65 today, is invested in a 'balanced' asset mix rather than a 'conservative' one (see Appendix).

- 6% Rule: median income level extends for two to three years, but there is a wider range of likely outcomes.
- Inflated 4% Rule: median income period extends for about six years. 6% of females and 3% of males are expected to survive until after the income ceases, so outliving savings is very unlikely.
- Fixed Date Rule: median income is up to one third higher, is much higher at the 95th percentile (around double at age 90) and is much lower at the 5th percentile (about one third lower at age 90).
- Life Expectancy Rule: median total income is about 15% higher but as with the Fixed Date Rule there is much greater possible variation in income levels due to the increased variability in investment returns.

These two changes to the income profiles are as expected. Delayed drawing on savings either increases income levels or makes them last to more advanced ages. While increasing investment risk is expected to have the same effect on average, it also widens the range of potential income levels and periods until income runs out.

3. Drawing less

Reducing the amount taken each year (e.g. replace the 6% Rule with a 5% Rule) is an obvious example of how income can be sustained for longer. We have not modelled this in detail, but as mentioned earlier, a 5% Rule in 2020 would look similar to the 6% Rule in 2017.

4. More rapid decumulation

Another option for retirees is to run down their retirement savings more rapidly than the Rules considered above suggest. This would mean that income would be higher in earlier years and savings run out sooner. Most people would then still have income from New Zealand Superannuation and rely on publicly-provided health and social care. This is essentially a Fixed Date Rule with the date set at, say, age 80 rather than age 85 or 90 years.

The rationale for this approach is based on the idea that retirees may get more out of consuming their savings in the earlier years of their retirement. For example, they may find more enjoyment in spending their savings while they are most likely to be healthy and active. If the investment returns earned on unspent savings are expected to be lower in the foreseeable future than in past decades, then the so-called 'return for patience' is reduced.

We have not modelled other options explicitly and would suggest individuals wishing to consider them take financial advice where appropriate. The balance of risks will change for each option and will depend on individual circumstances.

Appendix: Modelling Assumptions

The following mortality basis was used in our modelling: New Zealand Complete Cohort Life Tables (1876–2018), released on 4 March 2020, with death rates extrapolated after age 100 to age 120. We have used median scenario death rates for the relevant cohort aged 65 (or 70 for the “starting older” option) in 2020. (In our prior work the cohort start age was in 2017.)

The following expected return assumptions (net of fees and taxation at the rate of 28%) were used. The expected returns used in our 2017 paper are shown alongside.

Asset class	Expected return (pa)	2017 paper (pa)
Cash	1.1%	2.5%
Bonds	1.6%	2.9%
Equity	5.1%	6.1%

As in our 2017 paper, investment management expenses are not explicitly allowed for. Instead, we assume that they are either small (passive management) or that they are offset by value added from active management.

Investment returns are assumed to be normally distributed, as in 2017.

Our assumptions for after-tax return volatilities (Cash: **0.7% pa**, Bonds: **2.2% pa**, Equity: **18% pa**) also remain unchanged from our 2017 paper, as do pairwise return correlation assumptions which are:

Asset class 1	Asset class 2	Assumed correlation
Bonds	Equity	-0.2
Cash	Equity	0.0
Cash	Bonds	+0.1
Inflation	Equity	0.0
Inflation	Bonds	-0.3
Inflation	Cash	+0.1

Our expected rate of inflation is **1.0% pa** as in our previous paper.

The resulting overall expected returns for conservative and balanced asset allocations used in our modelling appear in the table below. As before, our conservative asset allocation assumes a 20% allocation to equities, 70% to bonds and 10% to cash and our balanced asset allocation assumes a 60% allocation to equities and 40% to bonds. Our overall expected returns are shown alongside those prescribed by the Financial Markets Authority (FMA) at the time of writing for the purposes of making balance projections for KiwiSaver statements. We note that the RIIG and FMA assumptions are similar.

Asset allocation	RIIG expected return (pa)	FMA expected return (pa)
Conservative	2.3%	2.5%
Balanced	3.7%	3.5%