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Morningstar retirement bootcamp

Webinar 1 – Understanding the maths of retirement

Webinar 2 – Estimating how much you will spend in retirement

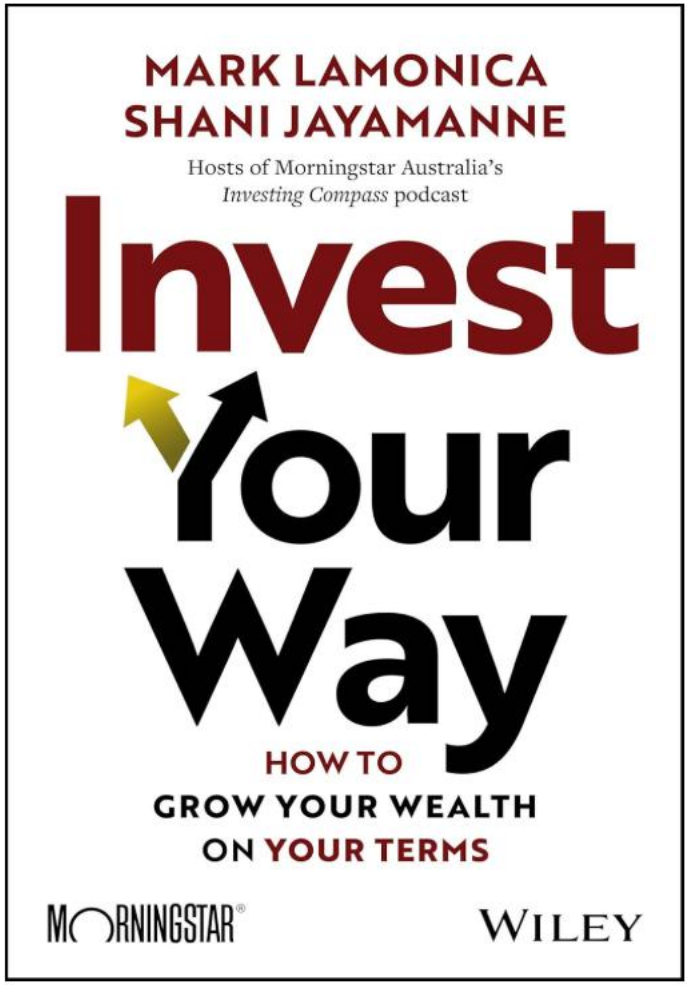
Webinar 3 – How much money you need to retire

Webinar 4 – Figuring out your retirement asset allocation

Learning objectives

Gain the foundational knowledge which will allow you to incorporate your individual circumstances into a personalised plan. Your plan will help you spend confidently by knowing you're not spending too much or too little.

Getting the foundations right



- The biggest issue many investors face is undermining their own outcomes by letting emotions influence decision making and making mistakes
- ETFs exacerbate these tendencies given the ease of trading, the proliferation of new ETFs and compelling marketing based on recent performance
- The key is adding structure to decision making by establishing goals, setting an investment strategy and developing a process to guide decision making

The 4% rule

The 4% rule was invented by a financial planner named Bill Bengen and it was supposed to represent a ‘safe’ withdrawal rate for a retiree based on historic market conditions.

The lesson from the 4% rule is how the interplay between different factors influences how quickly you run out of money in retirement. Understanding the 4% rule allows you to craft your own personalised retirement strategy which covers spending and portfolio construction.

Factors influencing how quickly you run out of money

- Withdrawal rate
- Inflation
- Level of returns
- Order of returns

The 4% rule

The 4% rule is designed to protect against the worse case scenario of retiring when inflation is high and markets plunge. There are several underlying assumptions in the 4% rule as originally constituted:

- Retirement lasts 30 years
- A retiree increases the dollar amount of the withdrawal by inflation each year
- Portfolios are proportionately sold to fund withdrawals
- Portfolios are 50% shares and 50% bonds
- Historic US returns were used between 1926 and 1992 (since updated in Trinity study)

To test different scenarios Bengen used a Monte Carlo simulation. A Monte Carlo simulation is named after the famous casino and estimates the probabilities of different outcomes by running every possible combination of a data set. The probability spit out by the simulation represents the chances of not running out of money over a specific time frame.

Running my own Monte Carlo simulation

I ran a series of different Monte Carlo simulations to demonstrate how changing variables impact retirement outcomes.

Baseline scenario: I'm using a 4% withdrawal rate for a 30-year retirement with a portfolio allocation of:

- 35% to Aussie shares
- 20% to US shares
- 15% to global ex-US shares
- 30% to US bonds

Terms	Asset allocation	Probability
30 years at 4% withdrawal rate	• 35% to Aussie shares • 20% to US shares • 15% to global ex-US shares • 30% to US bonds	78.37%
12 years at 4% withdrawal rate	• 35% to Aussie shares • 20% to US shares • 15% to global ex-US shares • 30% to US bonds	99.98%
30 years at 1.85% withdrawal rate	• 35% to Aussie shares • 20% to US shares • 15% to global ex-US shares • 30% to US bonds	99.46%

Running my own Monte Carlo simulation

More shares scenario: I'm using a 4% withdrawal rate for a 30-year retirement with a portfolio allocation of:

- 50% to Aussie shares
- 20% to US shares
- 20% to global ex-US shares
- 10% to US bonds

Shares have more volatility so even though they have higher returns they lower the probability of success.

Terms	Asset allocation	Probability
30 years at 4% withdrawal rate	• 35% to Aussie shares • 20% to US shares • 15% to global ex-US shares • 30% to US bonds	78.37%
12 years at 4% withdrawal rate	• 35% to Aussie shares • 20% to US shares • 15% to global ex-US shares • 30% to US bonds	99.98%
30 years at 1.85% withdrawal rate	• 35% to Aussie shares • 20% to US shares • 15% to global ex-US shares • 30% to US bonds	99.46%
30 years at 4% withdrawal rate	• 50% in Aussie shares • 20% in US shares • 20% in global ex-US shares • 10% in US bonds	68.59%

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Running my own Monte Carlo simulation

Worst 10 years first: I'm using a 4% withdrawal rate for a 30-year retirement with a portfolio allocation of:

- 35% to Aussie shares
- 20% to US shares
- 15% to global ex-US shares
- 30% to US bonds

The worst scenario for a retiree is having the market drop just as they retire.

Terms	Asset allocation	Probability
30 years at 4% withdrawal rate	• 35% to Aussie shares • 20% to US shares • 15% to global ex-US shares • 30% to US bonds	78.37%
12 years at 4% withdrawal rate	• 35% to Aussie shares • 20% to US shares • 15% to global ex-US shares • 30% to US bonds	99.98%
30 years at 1.85% withdrawal rate	• 35% to Aussie shares • 20% to US shares • 15% to global ex-US shares • 30% to US bonds	99.46%
30 years at 4% withdrawal rate	• 50% in Aussie shares • 20% in US shares • 20% in global ex-US shares • 10% in US bonds	68.59%
30 years at 4% withdrawal rate and 10 worst years 1st	• 35% to Aussie shares • 20% to US shares • 15% to global ex-US shares • 30% to US bonds	1.63%

Running my own Monte Carlo simulation

Cash instead of bonds: I'm using a 4% withdrawal rate for a 30-year retirement with a portfolio allocation of:

- 35% to Aussie shares
- 20% to US shares
- 15% to global ex-US shares
- 30% to cash

Cash has no volatility which makes a difference in the Monte Carlo simulation.

Terms	Asset allocation	Probability
30 years at 4% withdrawal rate	• 35% to Aussie shares • 20% to US shares • 15% to global ex-US shares • 30% to US bonds	78.37%
12 years at 4% withdrawal rate	• 35% to Aussie shares • 20% to US shares • 15% to global ex-US shares • 30% to US bonds	99.98%
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30 years at 4% withdrawal rate	• 35% to Aussie shares • 20% to US shares • 15% to global ex-US shares • 30% to cash	80.24%

Running my own Monte Carlo simulation

More shares plus cash: I'm using a 4% withdrawal rate for a 30-year retirement with a portfolio allocation of:

- 40% to Aussie shares
- 25% to US shares
- 20% to global ex-US shares
- 15% to cash

Cash allows you to increase share allocation and not reduce the probability of success.

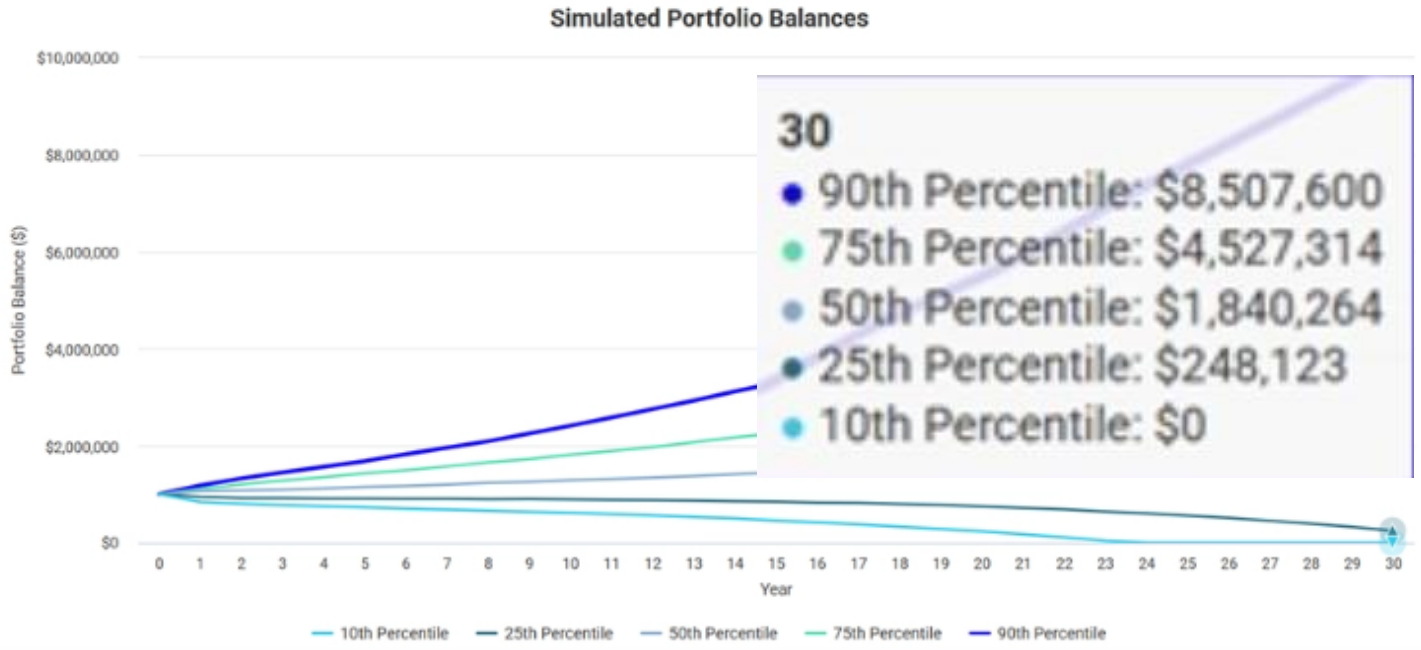
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Running my own Monte Carlo simulation

Baseline scenario: I'm using a 4% withdrawal rate for a 30-year retirement with a $1m portfolio and a portfolio allocation of:

- 35% to Aussie shares
- 20% to US shares
- 15% to global ex-US shares
- 30% to US bonds



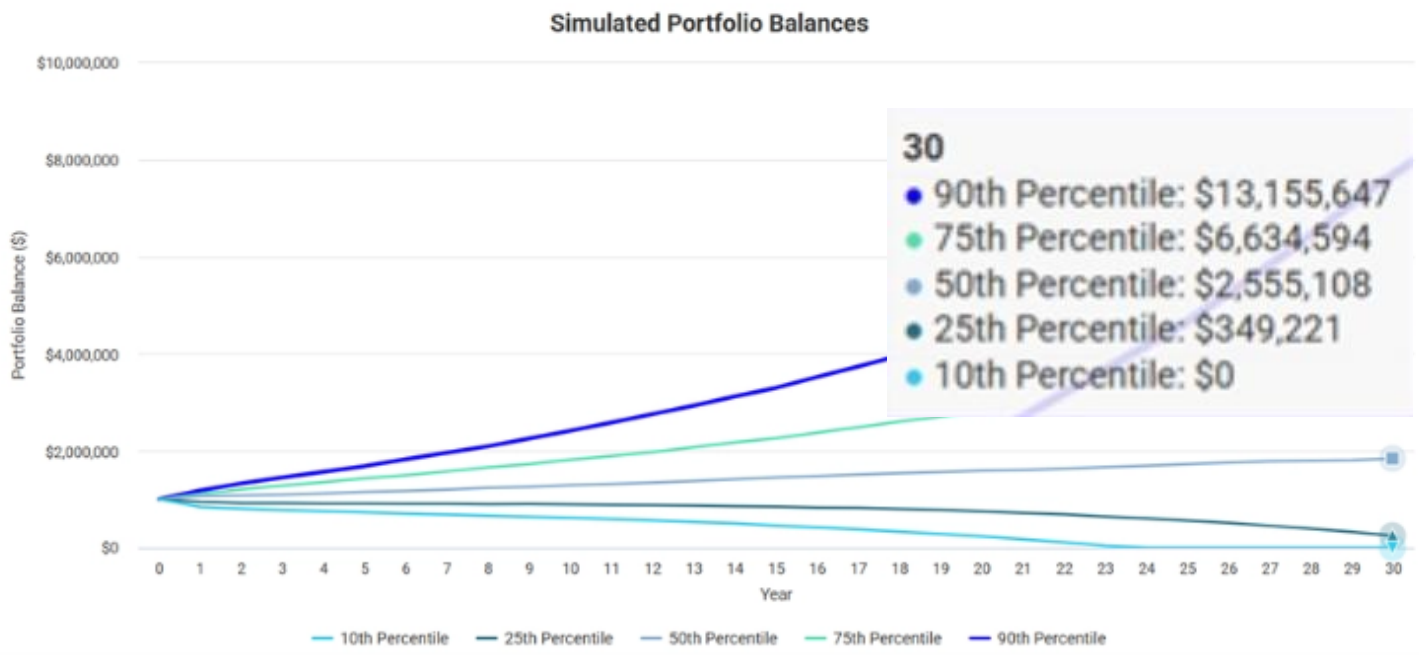
Source Portfolio Visualizer

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Running my own Monte Carlo simulation

More shares plus cash: I'm using a 4% withdrawal rate for a 30-year retirement with a $1m portfolio and a portfolio allocation of:

- 40% to Aussie shares
- 25% to US shares
- 20% to global ex-US shares
- 15% to cash



Source Portfolio Visualizer

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Quiz

If you can answer the following questions it is a good sign you understand the maths of retirement:

- What is the most challenging market environment to navigate as a retiree?
- What are the assumptions around spending embedded in the 4% rule?
- What are the assumptions about taxes embedded in the 4% rule?
- How long is the 4% rule designed to last?
- Why can two retirees with the same average return experience very different outcomes?

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