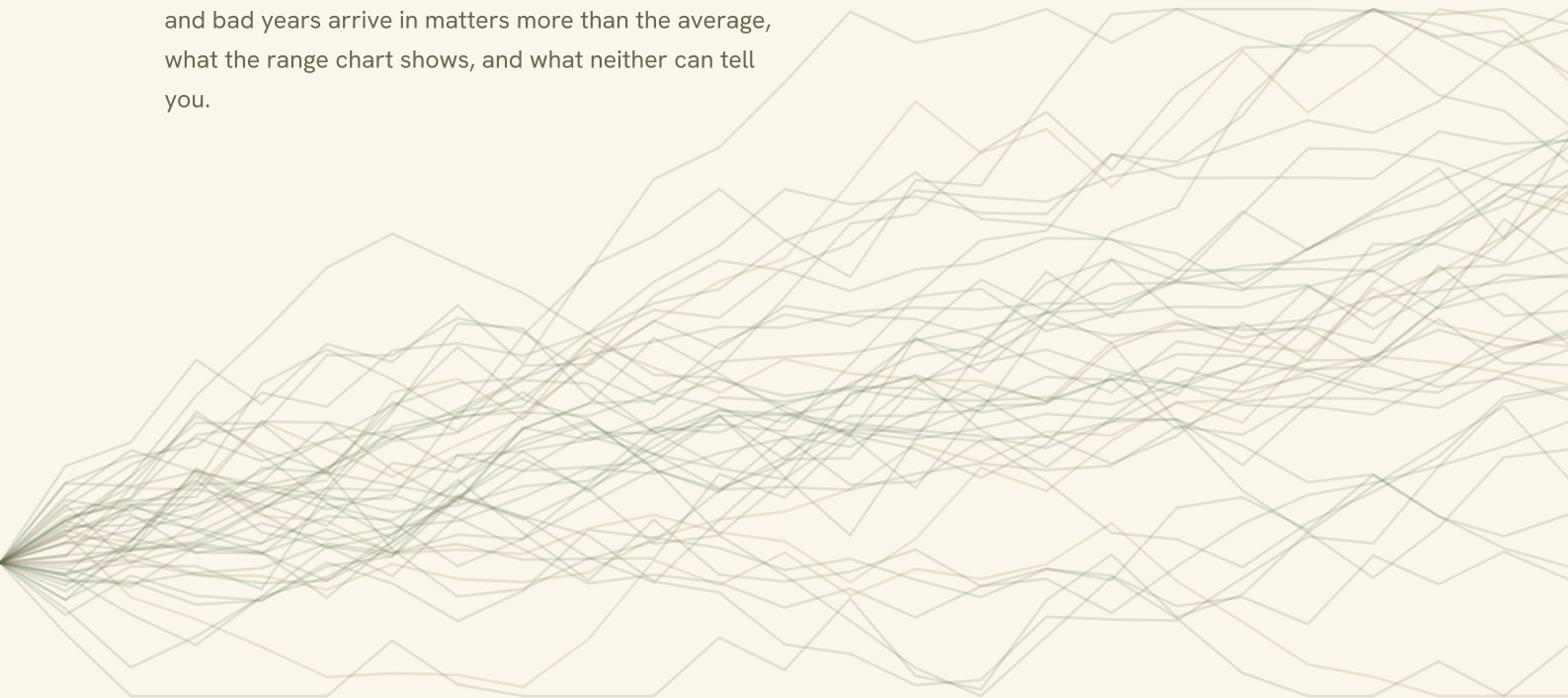


RETIREMENT GUIDE

# Simulated futures explained: what the number on your retirement plan means

Most people treat the percentage on a retirement plan like a test score out of 100. It's a count: out of 2,000 simulated futures, how many the money lasted. This guide explains what it counts, why the order your good and bad years arrive in matters more than the average, what the range chart shows, and what neither can tell you.



**Guidance and illustrations only, not regulated financial advice.** Figures are illustrations, not forecasts. Tax rules change and depend on your circumstances. For free impartial guidance see MoneyHelper, or Pension Wise if you are 50 or over.

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# Simulated futures explained: what the number on your retirement plan means

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A lot of retirement tools hand you a percentage, 85% say, and move on. Most people treat it like a test score out of 100 and don't give it a second thought. That's a shame, because the number is telling you something specific, and much more useful.

Here is what it means.

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## Retirement is a lot like a cross-country road trip

Think of planning your retirement like mapping out a long drive across the country. You set off with a tank of fuel, which is your pensions, your ISAs and any other savings you have set aside, and a distance to cover, which is however long you need that money to last. Every year of retirement you burn through a little of that fuel. Things like the State Pension or a final-salary pension act like mid-journey top-ups along the way.

When you start the engine, you can't predict exactly when you'll hit heavy traffic, bad weather or a bumpy road. The real question isn't whether you'll start the journey. It's whether you'll reach your destination.

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## The road you get is rarely the road you planned

No one drives the exact same route twice. On every trip you face different conditions, steep hills, sudden roadworks or a patch of bad weather, and they change your journey time and your experience of it. Some years the markets give you a lovely, long downhill run and you reach the next milestone with more in the tank than you expected. Other years you are climbing into a headwind, burning extra petrol to cover the same distance.

You don't get to choose which conditions you face. You find out as you go.

This is why a single, smoothly drawn projection line can be so misleading. A clean curve looks reassuring, like the answer, when it's one possible route out of an enormous set of roads you might end up taking instead.

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## A hill in the first ten miles hits harder than a hill in the last ten

This is the part that surprises most people, and it's why planning for retirement is trickier than saving up for it.

Hit a steep climb early and you are burning fuel you needed for the rest of the trip, with miles still stretching out ahead of you. Hit that same hill in the last ten miles and it barely registers: you are almost there, and there isn't much journey left to pay for.

Two drives can average the same gradient and finish in completely different places, purely because of the order in which the hills appeared. In the financial world this is called sequence-of-returns risk. While you are still saving it barely matters. Once you start drawing an income it changes everything: an early market dip means selling more of your investments at lower prices to cover your spending, and your pot might never fully recover.

An average return misses all of that, because averages don't care what order the hills come in.

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## Which is why a single average isn't enough

An average driver on an average road gives you a neat, tidy answer that tells you nothing about the days when things go wrong. You wouldn't judge your daily commute by driving it once on a quiet Sunday morning, and a retirement plan is a much longer drive with much worse traffic.

So this tool doesn't drive your route once. It drives it 2,000 times: the same car, the same tank and the same distance, but 2,000 different roads where the hills and the headwinds happen in a different order every time. Then it counts the results.

The technical name is Monte-Carlo simulation, and the name is the only complicated thing about it. It means running your plan through thousands of different scenarios, keeping every result, and showing you the full spread rather than guessing at one.

The number of test drives matters. Ten runs might give you a rough idea, but the range would jump about every time you looked at it. By 2,000 it has settled, which gives you a much higher level of confidence about what to expect across all possible conditions, good and bad.

You can watch that picture assemble one road at a time on [how the numbers are worked out](#), which shows a real run of the model rather than an illustration of one.

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## So what does the 85% mean?

It's a count. Out of 2,000 simulated futures, the money lasted the entire journey in about 1,700 of them, and ran out of petrol before the end in about 300.

Three things follow from that.

**It describes the model, not your life.** The number is a statement about 2,000 test drives based on the assumptions you chose: your expected returns, your spending, the age you plan to stop. Change any assumption and the count changes. It's a guide to think with, not a crystal ball predicting your particular future.

**Higher isn't automatically better.** A very high count usually means you are planning to spend far less than your pot could support. In other words, your plan might be leaving money unspent that you could be enjoying. Where to sit between security and enjoying your money is a personal choice, and no model can make it for you.

**The 300 that fall short aren't a disaster.** A run that fails means the modelled investment pot reached zero before the end of the plan. The State Pension carries on paying. In practice most people would see the trend coming years ahead and change something. It's an early warning about the shape of a plan, not a forecast of destitution.

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## What about that range chart?

The fan of faint lines is all those drives mapped at once, with your money up the vertical and the years running left to right.

The solid line up the middle is the typical drive: half the routes finished better than it, half finished worse. The band around it is the spread between a good road and a bad one. It gets wider the further into the future you look. That isn't a flaw in the drawing. Ten years out, the roads have had a decade to drift apart. Thirty years out, they have had three decades.

If a chart of the future doesn't get wider as it goes, it's hiding something from you.

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## What none of this can tell you

No tool can tell you which road you will end up driving. Nobody can. It doesn't know what markets will do tomorrow, and every figure in it rests on assumptions that will be wrong in one direction or another.

What it can show you is how many of those 2,000 roads you would arrive on, and how that number shifts when you change one thing: retiring a year later, spending at a different level, a different investment mix. The value isn't the single figure on its own. It's watching the count move when you alter a choice, and that's the part that helps you think clearly.

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## Where to get free, impartial help

For free, impartial guidance, the government's [MoneyHelper](#) service covers retirement options, and over-50s can book a free [Pension Wise](#) appointment to talk through what taking an income from a pension involves. For advice on your own circumstances, speak to a qualified, regulated financial adviser.

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**Related reading:** [sequence-of-returns risk](#) goes deeper on why the order of the hills matters, [how long £500,000 could last](#) puts the same method on a real figure, and [how the numbers are worked out](#) sets out every assumption behind the model.

### See it for your own numbers.

Build a free plan at [yourfuturecompass.co.uk/app](https://yourfuturecompass.co.uk/app)