

SIMPLE SCENARIO BOOTSTRAPPING

OCTOBER 2025

WAYS OF GENERATING SCENARIOS

- To recap: there are several ways of generating scenarios, which include:
 - Using history
 - Monte Carlo simulation
 - Boot-strapping
- Boot-strapping is a way of taking short periods from history and combining them to generate lots of scenarios of longer length.
- It takes a small number of historical periods and can generate many times more simulated scenarios.

HOW IT WORKS

- Say we have 100 historical monthly returns.
- To create a simulated annual return we can select 12 monthly returns at random and compound them together.
- There are $\frac{111!}{99!12!}$ ($> 10^{15}$, i.e. a lot of) ways of doing this.
- So even if we generate 1,000 years' worth of scenarios, they will still be practically independent of each other.
- Which means we get rid of serial correlation – any tendency for one scenario to influence the next.
- But because we are using ***the same months for each asset*** we *are* preserving the correlations between their returns.

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