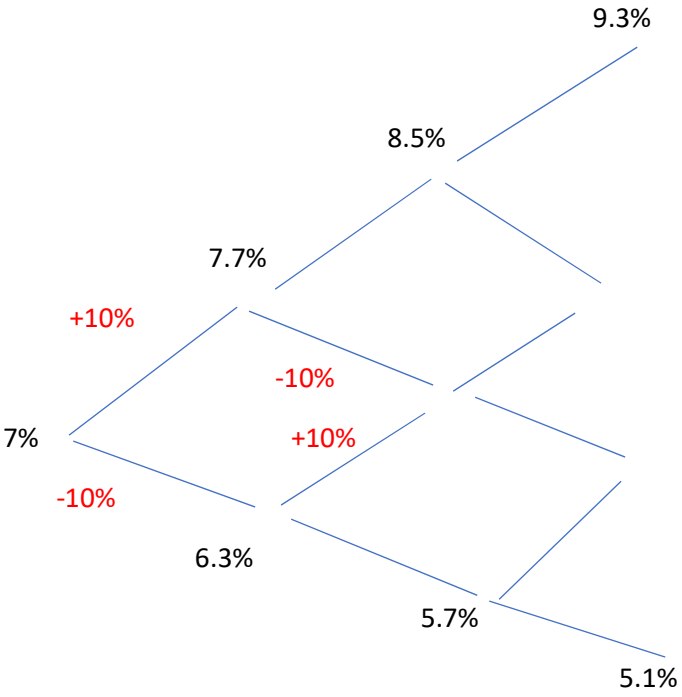
THE BIONOMIAL LATTICE FOR SHORT-RATE EVOLUTION (ONE-FACTOR MODEL)




Key Features of Binomial Process:

**Recombining Process**?

Does Up Move → Down Move end up at the same place as Down Move → Up Move

Example Above: 7% (1.1) = 7.7% 7.7% (.9) = 6.93%

7% (.9) = 6.3% 6.3% (1.1) = 6.93%

Advantage of Recombining Process: Number of nodes does not increase as quickly as process evolves compared to a non-recombing process

**Self-Calibrating Process?**

Calibration is the step in OAS estimation where the term structures of interest rates calculated along each short-rate path are adjusted to ensure that the average over all paths reproduces that current term structure. This step can be accomplished by selecting a probability model used to generate future short interest rate paths to ensure this is accomplished as the paths are generated. Without such a model, calibration is done by manually deleting paths. Heuristically, a self-calibrating model adjusts the up-down probabilities in the binomial process to ensure that the futures paths automatically satisfy calibration. This can be done by 'discretizing' continuous time models that are constructed to ensure calibration by estimating the parameters in the model, e.g., Ho-Lee, Black-Derman-Toy, CIR, Hull-White, Vasicek. Note, BDT was originally conceived as a binomial-process.