

## PAN EUROPEAN PENSION PRODUCT STOCHASTIC MODEL



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The stochastic model allows to reproduce different possible outcomes from saving for retirement under different investment strategies and therewith, to assess the risk profile and the potential performance of investment strategies.

It simulates different realisations of the financial world and generates, for each of them, the accumulated assets at the end of the accumulation phase, the end lump sum. The resulting distribution of lump sums allows the calculation of indicators to assess the investment strategy's risk profile and potential performance considering the whole accumulation phase.

The approach used here consists in reproducing the range of possible lump sums that PEPP savers could receive at retirement under different investment strategies. The model assumes an individual joining a PEPP at age 25, 35, 45 and 55 and contributing into it each month €100 until retirement at age 65. Contributions are invested into a portfolio according to the different investment strategies examined. An annual fee limited to 1% of accumulated assets is charged.

The stochastic model derives uncertainty about financial markets risks by generating 10,000 Monte Carlo simulations. Each simulation represents one possible realisation of the during the accumulation phase for the investment strategy returns, spot rates and inflation rates.

The scenarios simulated are based on several assumptions on inflation rate, interest rates, equity premiums, and equity returns, in line with EIOPA's technical standards.

The scenarios presented include an unfavorable, a best estimate and a favorable scenario to show what may happen if market conditions are worse, as expected, or better than expected. The unfavorable scenario represents the 15th percentile or the value such that in 15% of cases, the lump sum would be lower than this amount. The best estimate scenario represents the median, or the value such that in 50% of cases, the lump sum would be lower than this amount. The favorable scenario represents the 85th percentile or the value such that in 85% of cases, the lump sum would be lower than this amount. These scenarios are hypothetical illustrations.