

Improvements in Scenario Selection Methods

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Abstract: A continual challenge for actuarial modeling is the ability to produce reasonable projections in a timely manner while accommodating for increasing complex liability structures, investment strategies (including hedging activities), and policyholder behavior models. Increases in model complexity have led to an increased need for stochastic analyses, offsetting many of the gains of increased computing power. While various techniques already exist for selecting representative scenarios from sets of stochastic scenarios, many of the published methods exhibit related concerns. The goal of this paper is to discuss an approach which will address some of the typical concerns involved with existing scenario reduction techniques while also looking at the ongoing issues associated with any scenario selection method. Particular focus is given to producing a representative set of scenarios which can be used for detailed analysis of the tails while also providing valid information for review of the rest of the distribution.