The Use of Analytical-Statistical Simulation Approach in Operational Risk Analysis

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Abstract

Quantitative operational risk assessment is essentially based on stochastic scenario modeling of operational loss sequences. Given the lack of reliable historical data in most cases, mathematical methods should meet even stronger requirements in terms of results received and include specific features, namely: rare event analysis, uncertainty analysis and human factor analysis, etc. In this paper, the analytical-statistical simulation approach (ASSA) is considered as the most flexible approach to stochastic scenario loss sequence modeling and compared with Markov chain, fault/event tree and Monte Carlo, in terms of scenario loss sequence model adequacy and calculation cost. Probabilistic risk analysis software PRAISE and some applications are given.