Abstract:
Some methods for generating scenarios from multidimensional distribution assume we are able to generate scenarios from the one-dimensional distribution. We dedicate chapter 3 to this problem. At the end of the chapter, we provide references for applicable algorithms. Chapter 4 is focused on selected methods for generating scenarios from multidimensional distributions. In chapter 4.3, we introduce an algorithm for generating scenarios, which do not use any assumption about the distribution, except the first four moments and correlations to be specified. A method of generating scenarios based on approximation of multivariate normal distribution by the binomial distribution is described in chapter 4.5. Dimension reduction technique using principal components is presented in chapter 4.4. The algorithm is presented under the assumption of normal distribution. In chapter 4.6, we introduce the basics of the copula theory and a method for generating scenarios by C-vine copula. In chapter 5, we implement selected methods for generating scenarios for the estimation of daily value at risk for selected indexes and we discuss the results.