

This work focuses on measuring the quality of stochastic dominance approximation. A measure of non-dominance is developed to quantify the error caused by assuming that a stochastic dominance relationship holds even when it does not. It is computed exactly for uniform, normal, and exponential distribution, and a numerical study is performed to estimate its values for log-normal and gamma distribution. Portfolio optimization problems involving stochastic dominance constraints are also presented. They are applied to real-life data using monthly returns of twelve assets captured by the German stock index DAX. The end of this work focuses on the computation of the measure of non-dominance for the optimal portfolio with respect to the second-order stochastic dominance.