

This thesis is focused on distortion risk measures and distortion reward-risk ratios. Firstly, we summarize the properties of these measures related to coherency axioms and stochastic dominance. We present the proofs and explain the assumptions for consistency of distortion risk measures with stochastic dominance. Furthermore, their relation to risk measures Value-at-Risk and Expected Shortfall is explained, and numerous examples of these measures are presented. Then, the basics of the theory of distortion reward-risk ratios are provided. The main theoretical result of this thesis is the proposition of the distortion reward-risk optimization model. We propose this model with the assumption of a discrete loss random variable that has realizations with equal probabilities. Lastly, we analyze and discuss the results and limitations of our implementation in the specialized optimization software GAMS on real financial data. As it turns out, the class of distortion risk measures is prospective because it allows us to re-weight probabilities in the distribution and to model the risk-aversion preferences.