

Title: Bilevel optimization problems and their applications to portfolio selection

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Abstract: This work deals with the problem of bilevel tasks. First, it recalls the basic knowledge of mean-risk models, risk measure in singlelevel problems, and second degree stochastic dominance. Then it presents basic knowledge of bilevel tasks. bilevel problems have several advantages over singlelevel. In one process, it is possible to analyze two different or even conflicting situations. The bilevel role can better capture the relationship between the two objects. The main focus of the thesis is the formulation of various bilevel tasks and their reformulation into the simplest form. The numerical part deals with four types of formulated bilevel problems at selected risk measures.

Keywords: Bilevel problems, Second degree stochastic dominance, Risk measures