

The mean-absolute deviation portfolio ion problem with interval-valued returns

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Abstract In real-world investments, one may care more about the future earnings than the current earnings of the assets. This paper discusses the uncertain portfolio ion problem the asset returns are represented by interval data. Since the parameters are interval valued, the gain of returns is interval valued as well. According to the concept of the mean-absolute deviation function, we construct a pair of two-level mathematical programming models to calculate the lower and upper bounds of the investment return of the portfolio ion problem. Using the duality theorem and applying the variable transformation technique, the pair of two-level mathematical programs is transformed into a conventional one-level mathematical program. Solving the pair of mathematical programs produces the interval of the portfolio return of the problem. The calculated results conform to an essential idea in finance and economics that the greater the amount of risk that an investor is willing to take on the greater the potential return. In this study, data is extracted stock market companies during the years 91 to 95 and Return on year 96 is forecasted and the expected portfolio is determined.

Keywords : Keywords: Portfolio ion; Risk; Absolute deviation function; Two-level program.

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