

Multiperiod Portfolio Selection Based on a Minimax Rule¹

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Abstract — In this paper, we propose a new model for a multiperiod portfolio selection problem in a financial market. The investor seeks an investment strategy based on maximizing his/her terminal wealth while minimizing the total risk, which is measured by the sum of the maximum of absolute deviations over all the periods. On one side, the model serves an alternative to the popular multiperiod asset allocation strategy, in which the risk is often measured by the variance of the terminal expected wealth; on the other side, it provides a framework for employing the minimax principle to analyze multiperiod portfolio selection problems. The analytical optimal strategy is derived via the dynamic programming method. An example is also given to demonstrate adoption of the model.

Keywords — Portfolio optimization, minimax risk measure, bicriteria piecewise linear program

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