

## Portfolio Selection for the Risk Lover

Thomas Burkhardt<sup>1</sup>, Dominik Möhring<sup>2</sup>

### Abstract

**Introduction:** The theory of portfolio selection is one of the cornerstones of the theory of finance. It has been investigated from a myriad of perspectives, but regularly assuming risk averse behavior. On the other hand, it is well known that in certain situations investors might behave differently, that is risk loving. With the advent of prospect theory, it became understandable that we might assume risk loving behavior as common if the investor is in loss.

**Aim:** The purpose of this research is to analyze portfolio optimization under the standard assumptions of Markowitz assuming risk loving behavior. In this framework, risk loving behavior translates into variance maximization instead of minimization, given the expectation.

**Method:** We use mathematical analysis to provide essential theorems, and give numerical illustrations.

**Findings:** We find a very simple analytical structure of the portfolio frontier. We prove that an optimal portfolio can contain no more than two stocks, and that it is possible to construct the portfolio frontier piecewise of out of portfolios of two stocks.

**Originality and value:** We are not aware that this question has been considered in the literature. The model might support not only the true risk lover, who will be quite rare when it comes to substantial investments. More importantly, the insights contribute to our understanding of behavior in the case of loss, as well as in time optimal portfolio models.

**Key Words:** Portfolio Selection, Risk Management, Risk loving, Betting, Asset Management

**Jel Codes:** G 11, G 24, G 32

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<sup>1</sup> Univ.-Prof. Dr.habil, University of Koblenz, Faculty of Computer Science, Institute of Management, Chair of Finance, Germany

<sup>2</sup> Debeka Insurance Company, Department of Asset Management, Koblenz, Germany