Optimal portfolio projections: Optimizing portfolio returns in the case of elliptically and skew-elliptically distributed models

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July 2, 2026

Abstract

The concept of optimal portfolio projection is introduced as a technique that projects the portfolio weight vector to a lower dimension, enabling explicit solution of the optimal portfolio selection problem for any given risk measure. We study the class of skew-elliptically distributed risks. We show that, by following the proposed procedure, we can obtain explicit optimal weights for such risks, with a dramatic reduction in the complexity of the optimization problem.