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The risk-adjusted liquidity of a multi-asset portfolio is optimised using Copula Vine and CVaR: a case study for four G7 countries and six assets.

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Abstract:

Our objective is to evaluate the risk of a portfolio composed of several financial assets by liquidity-adjusted value at risk (LVaR) using Copula Vine to model multivariate data representing the series of returns. The portfolio consists of four G-7 stock index countries, gold, commodities, Etheureum, Tether, XRP and Bitcoin. Liquidity-adjusted VaR is competent for capturing the market liquidity risk of trading assets, and for the high flexibility derived from incorporating the multivariate vine copula dependency structure between portfolio assets into the optimization algorithm. The LVaR approach is superior to the classical mean-variance Markowitz portfolio technique in terms of optimal portfolio selection under a number of realistic operational and budgetary constraints. Bitcoin and gold improve the risk-return performance of the G-7 equity portfolio.

Keywords: Optimization, LVaR, CVaR, Copula Vine

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