عنوان مقاله:

A novel mathematical approach for fuzzy multi-period multi-objective portfolio optimization problem under uncertain environment and practical constraints

محل انتشار:

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خلاصه مقاله:

Investment Portfolio Optimization (IPO) is one of the most important problems in the financial area. Also, one of the most important features of financial markets is their embedded uncertainty. Thus, it is essential to propose a novel IPO model that can be employed in the presence of uncertain data. Accordingly, the main goal of this paper is to propose a novel Fuzzy Multi-Period Multi-Objective Portfolio Optimization (FMPMOPO) model that is capable to be used under data ambiguity and practical constraints including budget constraint, cardinality constraint, and bound constraint. It should be noted that three objectives including terminal wealth, risk, and liquidity as well as practical constraints are considered in proposed FMPMOPO model. Also, the alpha-cut method is employed to deal with fuzzy data. Finally, the proposed Fuzzy Multi-Period Wealth-Risk-Liquidity (FMPWRL) model is implemented in real-world case study from Tehran Stock Exchange (TSE). The experimental results show the applicability and efficacy of the proposed FMPWRL model for fuzzy multi-period multi-objective investment portfolio optimization problem under fuzzy environment.

کلمات کلیدی:

portfolio optimization, Multi-Period Problem, fuzzy optimization, Alpha-Cut Method, Data Ambiguity, Investment problem, Stock market