عنوان مقاله:

Bi-Level Portfolio Optimization Considering Fundamental Analysis in Fuzzy Uncertainty Environments

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خلاصه مقاله:

Portfolio construction and achieving the set of securities with the most desirability is one of the most critical problems in financial markets. Generally, there are two types of financial problems in literature, choosing the right stock portfolio from a set of possible options which is called portfolio selection, and calculating the portion of the purchase for each option which is called Portfolio optimization. In this paper, a new two-phase robust portfolio selection and optimization approach is proposed to deal with the uncertainty of the data. In the first phase of this approach, all candidate stocks' efficiency is measured using a data envelopment analysis (DEA) method. Financial criteria for evaluation chosen from fundamental perspectives. Then in the second phase, by applying the Fuzzy Weighted Goal programming (FWGP) model with criteria related to modern portfolio theory (return and risk) as well as the mentioned criteria, the portion of investment in each qualified stock is determined and the optimal investment portfolio is formed. Finally, the proposed approach is implemented in a real case study of the Dow Jones Industrial Market (DJIA). The resulting portfolios for the proposed models are compared against each other as well as against the Dow Jones Industrial Average index. The results show that for the data used and factors investigated some of the constructed portfolios, with a much smaller number of constituents, could potentially outperform DJIA in terms of their performance.

کلمات کلیدی:

Portfolio optimization, Fundamental Analysis, goal programming, Fuzzy uncertainty, Data envelopment analysis

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