Mathematical Programming Models for Portfolio Optimization Problem: A Review

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Abstract : Portfolio optimization problem has received a lot of attention from both researchers and practitioners over the last six decades. This paper provides an overview of the current state of research in portfolio optimization with the support of mathematical programming techniques. On top of that, this paper also surveys the solution algorithms for solving portfolio optimization models classifying them according to their nature in heuristic and exact methods. To serve these purposes, 40 related articles appearing in the international journal from 2003 to 2013 have been gathered and analyzed. Based on the literature review, it has been observed that stochastic programming and goal programming constitute the highest number of mathematical programming techniques employed to tackle the portfolio optimization problem. It is hoped that the paper can meet the needs of researchers and practitioners for easy references of portfolio optimization.