World Academy of Science, Engineering and Technology
International Journal of Mathematical and Computational Sciences
Vol:14, No:05, 2020

Multi-Criteria Based Robust Markowitz Model under Box Uncertainty

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Abstract : Portfolio optimization is based on dealing with the problems of efficient asset allocation. Risk and Expected return are two conflicting criteria in such problems, where the investor prefers the return to be high and the risk to be low. Using multi-objective approach we can solve those type of problems. However the information which we have for the input parameters are generally ambiguous and the input values can fluctuate around some nominal values. We can not ignore the uncertainty in input values, as they can affect the asset allocation drastically. So we use Robust Optimization approach to the problems where the input parameters comes under box uncertainty. In this paper, we solve the multi criteria robust problem with the help of E- constraint method.

Keywords : portfolio optimization, multi-objective optimization, є - constraint method, box uncertainty, robust optimization
Conference Title : ICAMEM 2020 : International Conference on Applied Mathematics and Engineering Mathematics
Conference Location : Sydney, Australia
Conference Dates : May 18-19, 2020