

Abstract

We consider the fundamental problem of computing an optimal portfolio based on a quadratic mean-variance model of the objective function and a given polyhedral representation of the constraints. The main departure from the classical quadratic programming formulation is the inclusion in the objective function of piecewise linear, separable functions representing the transaction costs. We handle the nonsmoothness in the objective function by using spline approximations. The problem is then solved using a primal-dual interior-point method with a crossover to an active set method. Our numerical tests show that we can solve large scale problems efficiently and accurately.