Abstract

This paper reviews various covariance matrix estimators and tests the out-of-sample portfolio risks calculated based on the different covariance matrix estimators. The effects of in-sample periods, day-of-standard-deviation periods, and the data transformation on the out-of-sample risks are also examined. The final goal is to find under what conditions the out-of-sample portfolio risks can be minimized. The expected portfolio returns are not considered in this paper.