

OKHRIN Yarema and Wolfgang SCHMID
Distributional Properties of Portfolio Weights

Several distributional properties are proved for optimal portfolio weights. The weights are estimated by replacing the parameters by the sample counterparts. All results for finite samples are made assuming normally distributed returns. For the weights obtained by the expected quadratic utility the exact covariances are calculated. The multivariate density function of the global minimum variance portfolio and the univariate density of the tangency portfolio are derived. The conditional density is provided for the Sharpe ratio optimal weights. It is shown that its expectations do not exist. Assuming that the returns follow a multivariate stationary Gaussian process the asymptotic distributions of the estimated weights are determined. The results are assessed in an empirical study.