

Abstract: This thesis describes statistical approaches of investment portfolio constructions. The theoretic part presents modern portfolio theory and specific statistical methods used to estimate expected revenue and risk of portfolio. These procedures are specifically selection method, modelling volatility using multivariate GARCH model, primarily DCC GARCH procedure and Bayes approach with Jeffrey's and conjugated density. The practical part of the thesis covers application of above mentioned statistical methods of investment portfolio constructions. The maximization of Sharp's ratio was chosen as optimization task. Researched portfolios are created from Austria Traded Index issues of shares where suitable time series of historical daily closed prices. Results attained within assembled portfolios in two year investment interval are later compared.