Abstract: The thesis describes the theory of capital asset pricing model (CAPM) and the issue of robust estimates. Robust methods are an effective tool to achieve better estimation relative to the classical least squares method when there is a failure to assume a normal distribution of errors or in the presence of outlying observations in the data. Theory of M-estimates, which is then applied in the practical part of the thesis to the multidimensional CAPM model is treated in detail. Theory of R- and L-estimates is explained in less detail. A simulation study compares simultaneous estimates in multivariate model and estimates designed individually when applied to the model assuming the mutual independence of equations.