

This diploma thesis studies extreme value theory and its application in financial risk management, when focusing on computation of well-known risk measure – Value at Risk (VaR). The first part of the thesis reviews theoretical background. In particular, it rigorously discusses the extreme value theory when emphasizing fundamentals theorems and their consequences followed by the summary of methods based on this theory, specifically, Block Maxima method, Hill method and Peaks over Threshold method. Moreover, specific issues that may arise in such applications and ways how to deal with these problems are described. The second part of the thesis contains extensive empirical study, which together with theoretical findings applies each of the examined method to real market data of the closing prices of Dow Jones Industrial Average stock index, stocks of JPMorgan and stock index Russell 2000 in order to compare methods based on extreme value theory together with the classic methodology RiskMetrics.