Abstract

Measuring and managing credit risk constitute one of the most important processes within bank risk management. Classical credit risk models assume multivariate normality for distribution of underlying risk factors. Resulting methods offer analytical simplicity and computational efficiency but disregard of extreme joint events since their probability is too small. Recently several studies have doubted multivariate normality assumption saying that if we accept this assumption we might seriously underestimate downside risk of given credit portfolio. The master thesis provides with an insight into the problem of modelling credit risk under assumption of heavy tailed risk factors. We first present necessary mathematical preliminaries of copula functions which stand for an alternative method of modelling multivariate dependence structures. Next we introduce a credit risk model for bond portfolio with heavy tailed risk factors. At last we carry out several simulations on portfolios of different riskiness and compare to what extent the results from both mentioned models differ.