

Abstract

Most of the literature on Value at Risk concentrates on the unconditional nonparametric or parametric approach to VaR estimation and much less on the direct modeling of conditional quantiles. This thesis focuses on the direct conditional VaR modeling, using the flexible quantile regression and hence imposing no restrictions on the return distribution. We apply semiparametric Conditional Autoregressive Value at Risk (CAViaR) models that allow time-variation of the conditional distribution of returns and also different time-variation for different quantiles on four stock price indices: Czech PX, Hungarian BUX, German DAX and U.S. S&P 500. The objective is to investigate how the introduction of dynamics impacts VaR accuracy. The main contribution lies firstly in the primary application of this approach on Central European stock market and secondly in the fact that we investigate the impact on VaR accuracy during the pre-crisis period and also the period covering the global financial crisis. Our results show that CAViaR models perform very well in describing the evolution of the quantiles, both in absolute terms and relative to the benchmark parametric models. Not only do they provide generally a better fit, they are also able to produce accurate forecasts. CAViaR models may be therefore used as a suitable tool for VaR estimation in practical risk management.