

## **Institut für Ökonometrie und Statistik**

### **Forschungsseminar**

**Thomas Dimpfl (Universität Tübingen)**

**26.01.2016, 16:00 (s.t.)**

**Seminargebäude – S 23**

### **Inter-quantile ranges and volatility of financial data**

#### **Abstract**

We consider the implications derived from quantile autoregressive (QAR) models on the volatility of financial data. We conduct a simulation study to pin down a possible data generating process which leads to the asymmetric, s-shaped pattern of autoregressive coefficient estimates in a QAR estimation of financial returns. An asymmetric GARCH model is identified as the best candidate. We then investigate the relationship between the asymmetry in the GARCH process and the inter-quantile range of QAR estimates. We interpret this range as asymmetric volatility response. Negative returns result in a broader conditional density implying a higher volatility than positive returns. Based on this difference we create a volatility forecast using the estimated density of the QAR model. We illustrate the performance of our approach with an evaluation of Value-at-risk and volatility forecasts.