Title: Estimating Growth at Risk with skewed stochastic volatility models

This paper proposes a Skewed Stochastic Volatility (SSV) model to estimate time-varying asymmetries in macroeconomic tail risks. In contrary to the popular semi-parametric quantile regression approach in the Macro at Risk literature, the SSV model captures the evolution of the full conditional density of a variable in a parametric, non-linear, non-Gaussian state space model. This allows to statistically test the effect of exogenous variables on the different moments of the conditional distribution and provides a law of motion to predict future values of volatility and skewness. The model can be estimated using a tempered particle MCMC algorithm that takes the asymmetry of the measurement densities into account and can handle large outliers such as the financial crises or the Covid shocks. The model is estimated for US and European Data to analyze financial and geopolitical risks on GDP growth.