# Robust Inference in Structural VAR Models identified by Non-Gaussianity

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*Abstract:*

All parameters in structural vector autoregressive (SVAR) models are locally identified when the structural shocks are independent and follow non-Gaussian distributions. Unfortunately, standard inference methods that exploit such features of the data for identification fail to yield correct coverage for structural functions of the model parameters when deviations from Gaussianity are small. To this extent, we propose a robust semi-parametric approach to conduct hypothesis tests and construct confidence sets for structural functions in SVAR models. The methodology fully exploits non-Gaussianity when it is present, but yields correct size / coverage regardless of the distance to the Gaussian distribution. Empirically we revisit two macroeconomic SVAR studies where we document mixed results. For the oil price model of Kilian and Murphy (2012) we find that non-Gaussianity can robustly identify reasonable confidence sets, whereas for the labour supply-demand model of Baumeister and Hamilton (2015) this is not the case. Moreover, these exercises highlight the importance of using weak identification robust methods to assess estimation uncertainty when using non-Gaussianity for identification.