SEMINAR

"The marginal likelihood of structural time series models, with application to the US and the euro area NAIRU"

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Abstract:

We propose a new result that simplifies the evaluation of the
marginal likelihood in Gaussian Structural Time Series (STS) models. For
this we exploit the statistical properties of STS models and a theorem
in Dickey (1968) to obtain the likelihood marginally to all variance
parameters. Our strategy applies under inverted gamma-2 prior
distributions for the structural shocks variances. In general, we show
that marginalizing with respect to variance parameters greatly improves
the accuracy of the Laplace method. Moreover, in some empirically
relevant cases such as the local level and the local linear trend, it yields the marginal
likelihood by single or double integration over a finite support. We use
our methodology to weight models for the NAIRU in the US and in the euro area.