

Package Name: UCSVM

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Add-in Type: Series

Default Proc Name: ucsvm

Default Menu Text: UC Stochastic Volatility Model

Interface: Dialog and command line

Description

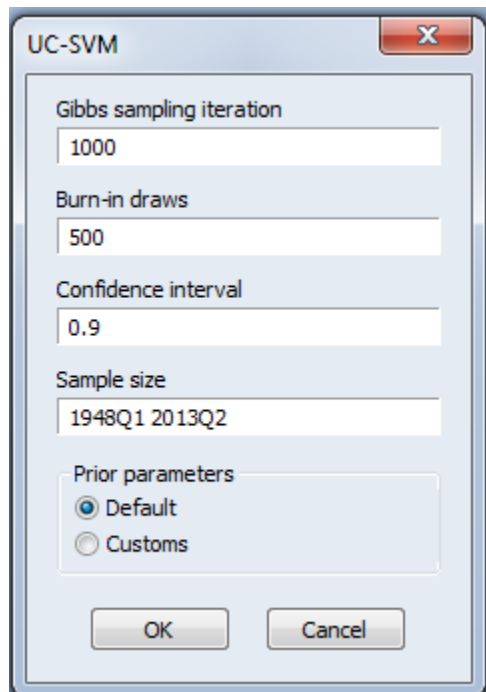
The add-in estimates the following unobserved component stochastic volatility model (UCSVM) using Bayesian approach:

$$\begin{aligned}y_t &= \tau_t + \alpha_t e_t^h + \varepsilon_t^y, & \varepsilon_t^y &\sim N(0, e_t^h) \\h_t &= \mu + \phi(h_{t-1} - \mu), & \varepsilon_t^h &\sim N(0, \sigma^2) \\ \gamma_t &= \gamma_{t-1} + \varepsilon_t^\gamma, & \varepsilon_t^\gamma &\sim N(0, \Omega)\end{aligned}$$

where $\gamma_t = (\alpha_t, \tau_t)'$ and Ω is a 2x2 covariance matrix

Dialog

Upon running the add-in from the menus, a dialog will appear:



The image shows a dialog box titled "UC-SVM" with a standard Windows-style title bar (minimize, maximize, close buttons). The dialog contains several input fields and a group box for options. The "Gibbs sampling iteration" field is set to 1000. The "Burn-in draws" field is set to 500. The "Confidence interval" field is set to 0.9. The "Sample size" field contains the text "1948Q1 2013Q2". Below these fields is a group box labeled "Prior parameters" containing two radio buttons: "Default" (which is selected) and "Customs". At the bottom of the dialog are "OK" and "Cancel" buttons.

Field	Value
Gibbs sampling iteration	1000
Burn-in draws	500
Confidence interval	0.9
Sample size	1948Q1 2013Q2
Prior parameters	Default (selected)

Command line:

series.ucsvm(options)

for example:

uscpi.ucsvm(gibbs=1100, burn=200, band=0.68, sample="1980q1 2013q2")

Options

gibbs	Gibbs sampling iteration (default=1000)
burn	Burn-in draws (default=500)
band	Confidence band (default=0.9)
sample	Sample size

References:

Joshua C. C. Chan (2017) The Stochastic Volatility in Mean Model With Time-Varying Parameters: An Application to Inflation Modeling, Journal of Business & Economic Statistics, 35:1, 17-28