

Project Plan – Electricity Price Modelling with Synthetic Likelihoods

Completed So Far

- Draft chapter outlining Huisman's electricity price model
- Draft chapter outlining the synthetic likelihood method, the robust covariance estimator and the zero-inflated Gamma example
- Convergence to true parameters working for simplified model (no regime switching)

Still to Complete

- Trial the following statistics
 - ML estimates from a skewed distribution (Gamma)
 - Regression coefficients from regressing $s(t)$ against $s(t-1), \dots, s(t-7)$
- Calculate the covariance matrix of the above and remove any heavily correlated statistics. Include this in the report
- Use the above to fit the full model
- Show the method makes sense by providing proofs of the
 - Asymptotic normality of the M-estimator
 - Consistency of the robust covariance estimator
- Write about the double penalty effect
- Options

Timeline

<u>Time period</u>	<u>Task</u>
Christmas Break	Trial statistics, fit full model
Exam Period	
TB2 W1	Fit full model, write about double penalty effect
W2	Proofs of M-estimator and consistency of robust covariance estimator
W3-4	Complete final draft of above sections (Introduction, Electricity Price Model, Synthetic Likelihoods, Model Fitting)
W5	Overspill Week (Perhaps we could meet this week to discuss progress and presentation)
W6-7	Prepare and practise project presentation (Beamer)
W8-9	Complete section on pricing options
WC 28 th March	Give presentation
Spring Break (Apr 4)	Complete whole project report
WC 25 th April	Final meeting & final edits
Monday 9 th May	Project due at 12 Noon