

CERF Studentship Report – Outputs

Jeroen Dalderop, April 2015

Working Papers

1) 'Nonparametric State-Price Density Estimation using High Frequency Data'

"The state-price density (SPD) implicit in option prices can be estimated using nonparametric time series regression, as first done by Ait-Sahalia and Lo (1998). In this paper we exploit high frequency data to avoid the assumption of a time-invariant regression function, and instead estimate the SPD using a kernel regression locally around the time point of interest. Consistency and asymptotic normality are achieved using infill asymptotics, where we assume the traded strike prices to follow a mixing, locally stationary time series. To allow for random and possibly endogenous trading times, we generalize the results in Vogt (2012) towards sampling times described by point processes. We investigate a data driven choice of the sampling windows that automatically adapts to the speed of information flow in the market. In an application to S&P 500 E-mini European call and put options we discuss some stylized facts of the local-in-time cross-validated bandwidths."

Presentations

April 2014: Econometrics Workshop, Faculty of Economics, University of Cambridge

November 2014: Econometrics Workshop, Faculty of Economics, University of Cambridge

May 2015 (scheduled): CERF Cavalcade, Judge Business School, University of Cambridge

June 2015 (scheduled): SoFiE Spring School, Belgian Central Bank, Brussels

2) 'Nonparametric Estimation of the Stochastic Discount Factor'

(very preliminary, no abstract available yet)