Estimating Dynamic Equilibrium Models using Mixed Frequency Macro and Financial Data

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Abstract

We provide a framework for inference in dynamic equilibrium models including financial market data at daily frequency, along with macro series at standard lower frequency. Our formulation of the macro-finance model in continuous-time conveniently accounts for the difference in observation frequency. We suggest the use of martingale estimating functions (MEF) to infer the structural parameters of the model directly through a non-linear optimization scheme. This method is compared to regression-based methods and the general method of moments (GMM). We illustrate our approaches by estimating the AK-Vasicek model with mean-reverting interest rates. We provide Monte Carlo evidence on the small sample behavior of the estimators and report empirical estimates using 20 years of U.S. macro and financial data.

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