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Dealing with Financial Instability under a DSGE modeling approach with Banking Intermediation: a predictability analysis versus TVP-VARs [*]

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Abstract

In the dynamic stochastic general equilibrium (DSGE) literature there has been an increasing awareness on the role that the banking sector can play in macroeconomic activity. We present a DSGE model with financial intermediation as in Gertler and Karadi (2011). The estimation of shocks and of the structural parameters shows that time-variation should be crucial in any attempted empirical analysis. Since DSGE modelling usually fails to take into account inherent nonlinearities of the economy, we propose a novel time-varying parameter (TVP) state-space estimation method for VAR processes both for homoskedastic and heteroskedastic error structures. We conduct an exhaustive empirical exercise to compare the out-of-sample predictive performance of the estimated DSGE model with that of standard ARs, VARs, Bayesian VARs and TVP-VARs. We find that the TVP-VAR provides the best forecasting performance for the series of GDP and net worth of financial intermediaries for all steps-ahead, while the DSGE model outperforms the other specifications in forecasting inflation and the federal funds rate at shorter horizons.

JEL Classification: C11, C13, C32, E37

Keywords: Financial frictions, DSGE, Time-varying coefficients, Extended Kalman filter, Banking sector

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