# Policy-oriented macroeconomic forecasting with hybrid DGSE and time-varying parameter VAR models *

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**Abstract**

Micro-founded dynamic stochastic general equilibrium (DSGE) models appear to be particularly suited for evaluating the consequences of alternative macroeconomic policies. Recently, increasing efforts have been undertaken by policymakers to use these models for forecasting, although this proved to be problematic due to estimation and identification issues. Hybrid DSGE models have become popular for dealing with some of model misspecifications and the trade-off between theoretical coherence and empirical fit, thus allowing them to compete in terms of predictability with VAR models. However, DSGE and VAR models are still linear and they do not consider time-variation in parameters that could account for inherent nonlinearities and capture the adaptive underlying structure of the economy in a robust manner. This study conducts a comparative evaluation of the out-of-sample predictive performance of many different specifications of DSGE models and various classes of VAR models, using datasets for the real GDP, the harmonized CPI and the nominal short-term interest rate series in the Euro area. Simple and hybrid DSGE models were implemented including DSGE-VAR and Factor Augmented DGSE, and tested against standard, Bayesian and Factor Augmented VARs. Moreover, a new state-space time-varying VAR model is presented. The total period spanned from 1970:1 to 2010:4 with an out-of-sample testing period of 2006:1-2010:4, which covers the global financial crisis and the EU debt crisis. The results of this study can be useful in conducting monetary policy analysis and macro-forecasting in the Euro area.

**JEL Classification:** C11, C15, C32

**Keywords:** Forecasting, Factor Augmented DSGE, Time-varying parameter models, DGSE-VAR, Bayesian analysis

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