

The Forecasting Properties of a Small Open Economy model with Optimal Monetary Policy

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A brief explanation of this paper

- Focuses on the out-of sample forecasting fit of the DSGE model
- Horse race between specifications of monetary policy to achieve lower h-step ahead RMSPE
- Alternative specifications considered:
 - simple instrument rule
 - optimal policy under commitment
- Benchmark models used for comparison:
 - DSGE-VAR model that relaxes some cross equation restrictions
 - Bayesian VAR with Minnesota-type prior (why not Sims-Zha?)
- Central contribution of this paper:
 - which of the two alternative specifications is closest to observed data

Main Results

- In-sample fit of the model:
 - DSGE with optimal policy beats simple rule
 - hyperparameter λ favors optimal policy rule
- Out-of-sample fit of the model:
 - no clear winner
 - optimal policy does better for Δy , Δc , Δi
 - simple rule does better for π and interest rate
- Interpretation provided:
 - optimal monetary policy reduces the degree of misspecification

- Sales pitch:
 - comments based on work in progress
 - Gupta(2009) and Faust and Gupta(2009)
 - will present tomorrow
 - title: "A Forecasting Metric for Evaluating DSGE Models for Policy Analysis" (job market paper)
 - how misspecification in DSGE models affects the models forecasting properties
- Their basic idea: which specification forecasts better?
 - another way to put it: which horse runs faster?
- Problem with this approach:
 - if both models are badly misspecified, this is the wrong question to ask
 - if both horses run in the wrong direction, doesn't matter which one runs faster
 - neither will reach its destination
- My main idea:
 - All DSGE models are misspecified
 - need to evaluate these DSGE models for a particular task at hand

- Hyperparameter λ
 - Del-Negro et. al. make a formal statement about degree of misspecification
 - hyperparameter tells which model is closer to data for overall fit
- Specific misspecification adversely affects the models performance for specific tasks at hand
 - λ silent about specific form of misspecification
 - Faust and Gupta(2009) evaluate misspecified models for specific tasks at hand
 - use some standard and some "new" Bayesian tools

Comments: New Framework for Evaluating Model Misspecification

- I emphasize the link between:
 - misspecification in the model and
 - the effect on the structural interpretation of the model for a specific task
 - I focus on monetary policy analysis and forecast errors
- This naturally suggests areas of improvement for the DSGE models
- I will now give a brief example:
- In the interest of time, I will skip the motivation.
 - I will talk about it tomorrow.

Example

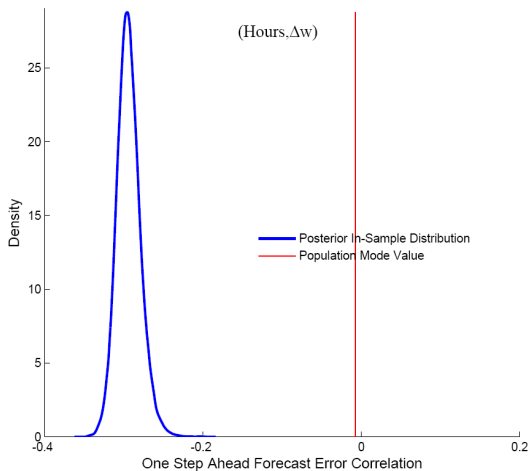


Figure: One Step Ahead Forecast Error Correlation: Hours and Wage Growth.

Example

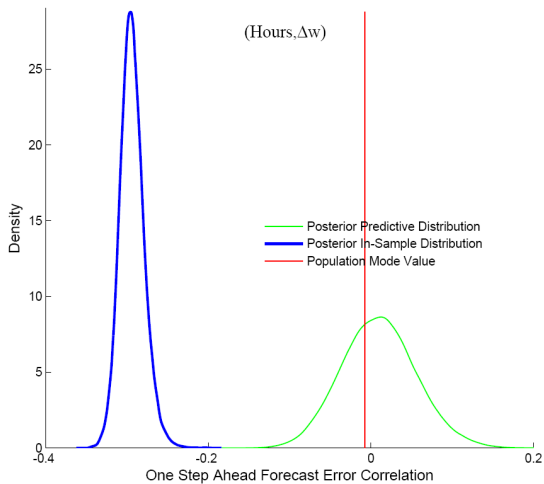


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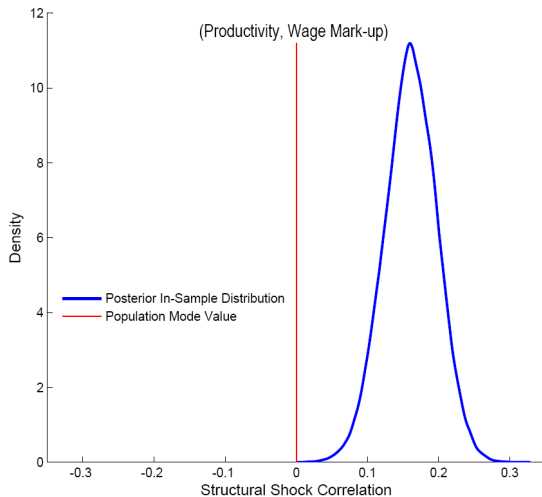


Figure: Structural Shock Correlation: Productivity and Wage Mark-up.

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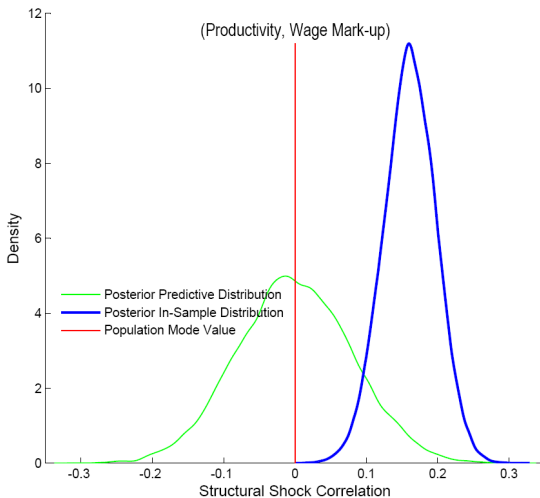


Figure: Structural Shock Correlation: Productivity and Wage Mark-up.

Final Remarks

- In light of the previous example, I find the interpretation given by the authors both inappropriate and uninformative
- They state: Optimal monetary policy reduces the degree of misspecification
- The notion of overall misspecification:
 - does not bridge the gap between models and policy analysis
 - does not provide constructive criticism of DSGE models
- Applying the framework laid out in Gupta (2009) Faust and Gupta (2009) is a better way of dealing with misspecified models.