

Discussion of

The New Area-Wide Model II:

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This paper

- After the financial crisis of 2008/09, many central banks had to rely on unconventional monetary policy
- Structural models were the only guidance when making conditional forecasts
- Present paper is part of the ECB's agenda to provide coherent modeling framework to analyze such policies
- Goals:
 1. Capture two-way interaction between loan rate developments and the macroeconomy
 2. Be able to simulate the macroeconomic impact of large-scale asset purchases

Modeling

- NAWM I: “industrial-scale DSGE model” with many bells and whistles
→ 18 observables and 19 shocks
- NAWM II: augments the NAWM I by a financial block, consisting of a funding-constrained wholesale bank and monopolistically competitive retail banks
→ adds another 5 observables and 11 shocks

My take

Very impressive piece of model-building!

My comments: Overview

- I am not going to comment on the nuts and bolts, given that there is no (academic) paper (yet)
- Instead, I will take the opportunity to comment on some big issues and hope to elucidate the practitioner's view on these topics:
 1. Model selection
 2. Model size/mis-specification

Model performance during the Great Recession

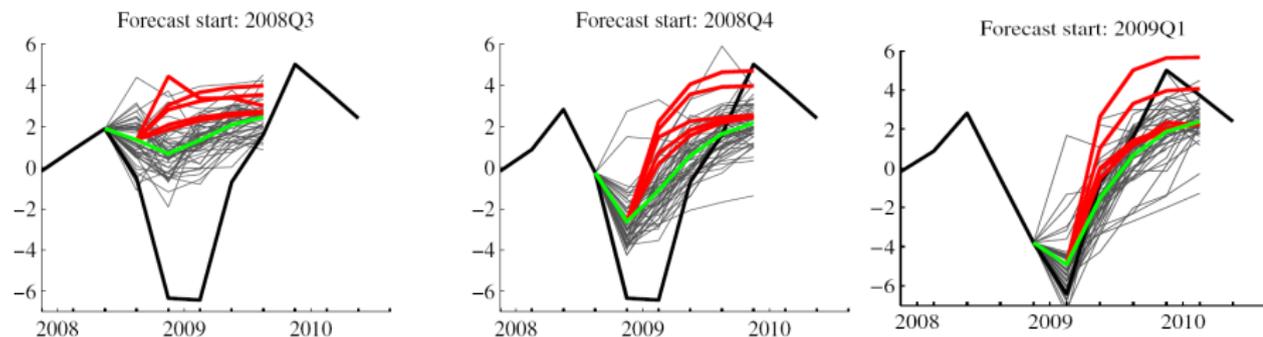
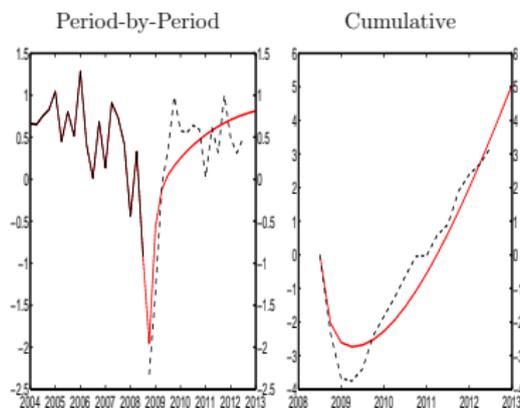


Figure: Out-of-sample forecasts of DSGE models (red) and professional forecasters (green) (Wieland/Wolters (2012), VOXEU)

- DSGE models and professional forecasters equally failed to predict the crisis

Forecasting in the Great Recession

Figure 1: Forecasts of Output Growth



Notes: The solid black lines depict actuals up to the forecast origin; the solid red lines indicate the forecast paths; the dashed black lines correspond to the actual paths.

Figure: Out-of-sample forecasts of DSGE model starting in 2008Q4 (Del Negro, Giannoni, and Schorfheide (2013))

- Smets and Wouters (2007) model with Bernanke, Gertler, and Gilchrist (1999)/Christiano, Motto, and Rostagno (2003) financial frictions

Model selection

- Big issue was not necessarily that the class of models was useless, but that we did not know which model (elements) to choose
- Problem: we only have one history of observables, which is potentially consistent with a lot of stories

My questions I

- What principle is guiding the development of the NAWM II?
- Financial frictions seem to be important, but which/where?
 - Why is the relevant enforcement constraint one of a wholesale banker absconding with money, i.e. between intermediary and saver?
 - Why is the friction not between firms/mortgage takers and intermediaries?

Size matters ?!?

- IS-LM model consisted of a handful equation
- Subsequent Keynesian systems of equations modeling reached more than 400 equations (e.g. Brookings model)
- Lucas (1976)/Sims (1980): need structural models with credible and consistent identification assumptions
- Kydland and Prescott (1982): small number of stochastic linear difference equations sufficient to capture relevant aspect of the data
- Today's central bank models: hundred(s) of equations
→ "It's like déjà vu all over again"

Size matters !?!

My questions II

- Where does the optimal trade-off lie between model realism and model mis-specification?
- Are the cross-equation restrictions on the VARMA-representation of the 23 observables credible?
- Do all 30 shocks represent truly exogenous driving factors?
- Can we somehow prune the sprawling tree?
- Where does the mis-specification go and does it materially affect the conclusions?
- (How does one reliably estimate a model in such a high-dimensional parameter space with short data samples and weakly identified parameters?)

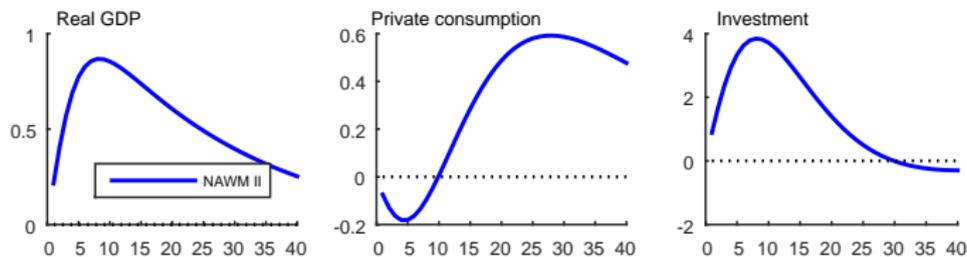
Path Dependence: Solution Method

- NAWM II stays on the path set by NAWM I: use linear state space model and push the boundaries by including new features
- Allows high degree of realism and makes estimation feasible
- But: portfolio choice problems, risk-return tradeoffs, effective ZLB were presumably central

My questions III

- Is a certainty-equivalent model a suitable device to study these issues?
- What about occasionally binding constraints?

Occam's Razor/Parsimony: Co-movement



- Boom/Recessions are times when macroeconomic series co-move, while structural shocks are (supposed to be) orthogonal

My questions IV

- How do we square this with “financial shocks” typically causing consumption booms?
- Is it an accident that there is always a preference or government spending shock around the corner?

Conclusion

- Very interesting and highly policy-relevant work
- Raises a bunch of general, important, and hard to answer questions

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