Discussion of

“Monetary policy, terms of trade and exchange rate responses. A Markov-Switching structural investigation” (R. Alstadheim, H. Bjørnland, J. Maih)

by Sandra Eickmeier (Deutsche Bundesbank)

Norges Bank-ECB workshop, Nov. 2012

Scope / motivation

- Estimate a small open economy MS DSGE model (Lubik/Schorfheide, LS) with switching Taylor rule params and shock volas.
  - 4 small open economies: CA, SWE, NO, UK
  - 1982-2011

- Small open economies often destabilized by term of trade shocks. CB might do better by reacting to intermediate target = here the exchange rate.

- Paper assesses
  - whether and when CBs have indeed reacted to exchange rates also after having adopted IT and
  - how this has affected the transmission of terms of trade and other shocks.

Contributions

- **Closely related work**
  - LS estimate whether central banks in UK, CA, AU, NZ react to exchange rates in DSGE model. ABM: estimates possibly contaminated by regimes shifts
  - Estimating MS-DSGE models relatively new (Davig/Leeper 2007, Castelnuovo et al 2008, Liu/Mumtaz 2011 (LM)). LM apply MS-DSGE model to UK to analyze same question.
  - → ABM apply DSGE model à la LS with MS to UK, CA, NO, SE. Why not to AU, NZ?

- **Further contributions**
  - ABM plan to use latent instead of observed factors for foreign output and inflation.
  - No prior detrending of variables
  - New solution algorithm (Maih 2012)

Overview of comments

- Misspecification vs. tv params

- Markov-Switching in Taylor rules

- Inflation forecasts in central banks

- Other monetary policy strategies

- Results / minor comments

Misspecification vs. tv params

- Frictions lacking in LS model (as in many other small structural models). LS: „The model contains only a very weak endogenous transmission mechanism."

  – This could, e.g., be due to the fact that terms of trade are assumed exogenous and cannot be stabilized by the CB. Lack of possibly important feedback mechanism. → Two-country model perhaps better suited.

- Other params vary as well. E.g. LM show time-dependence in price setting.

- Same regimes assumed for volas of all shocks.

→ Misspecification might be captured by tv params.

Markov-Switching in Taylor rules

- Hard to label regimes in MS models

- This might be easier in structural models as deep structural params are assumed to change.
  - MS and DSGE models not the same philosophy, but might be seen as useful complements given imperfections in structural models.

- Possible changes where it makes sense to use MS
  - Active/passive MP and FP regimes (Davig/Leeper 2007)
  - Changing prefs for infl/output stabilization (hawks/doves) (Assenmacher-Wesche 2006, Owyang/Ramey 2004)
  - Asymmetries in business cycles (Rabanal 2004)/deflation risk
  - Perhaps asymmetries linked to financial cycles („leaning against the wind" (Lansing 2008) / „mop up" after burst of bubble)

Markov-Switching in Taylor rules cont.

- You mainly motivate use of MS model with introduction of IT (after exchange rate targeting).

- Alternatives: structural breaks or smooth transition
  - LM: fact that agents allowed to form expectations about shift important

- Perhaps could just provide different motivation and interpretation of regimes.

- It might, in general, be useful to extend period to the 1970s which were characterized by greater changes in MP strategies and in shock volas and by less commitment.

Inflation forecasts in central banks

- Svensson (1997) lists criteria to be satisfied by an intermediate target (here: exchange rates) to which CBs can react. One is that it should be easier to observe than the goal (future inflation).

- In the LS model, all agents form model consistent expectations (relying only on variables included and structure imposed in that particular model).

- Current practice in CBs is different.

- To what extent is your result that CBs react to exchange rates driven by the expectation formation process assumed in the model?

Inflation forecasts in central banks cont.

- You may want to consider a more realistic expectation formation setup in the model
  - Use of lots of variables
    - Bernanke/Boivin (2003): MP in a data-rich environment. Parsley/Popper (2009) estimate LS model for Korea using factors as instruments → MP reaction to exch. rates disappear.
    - Boivin/Giannoni (2008): Optimal monetary policy in a DSGE model with lots of variables.
  - and lots of models (e.g. SAM by Norges Bank)
  - Exchange rates are frequently and timely available, but other variables are too. These observations can be included in domestic forecasts.
    - Foroni/Marcellino (2012), Kim (2010): mixed frequency data in DSGE models
    - How important are exchange rates for inflation forecasts at different horizons? How large is weight attributed to model using prominently exchange rates to predict inflation in SAM? Is it changing over time?
  - Use of CB/survey/your own forecasts in DSGE model (Milani 2011).

Other monetary policy strategies

- You could extend paper by looking at other MP strategies recently emphasized, such as product price or export price targeting (Frankel 2011) for small open economies.

- Fundamental vs. nonfundamental movements in exch. rates
  - Popular view (e.g. Disyatat 2010 and refs therein): MP under IT should react to nonfundamental component of asset prices to avoid negative effects of large and fast reversals on the economy.
  - Same for exchange rates (ABM: „There has been […] widespread speculation in European currency markets.")
  - Bubbles not allowed for in LS model.
  - Recently, Phillips et al. (2011) have tested for explosive processes in asset prices to detect bubbles.
  - Bettendorf/Chen (2012) do not find bubbles in CA/US and UK/US exchange rates, but this may be different for other countries and seems to depend on assumptions on fundamentals.

Results / minor comments

- High degree of interest rate smoothing (especially for NO in both regimes) could be due to fact that CBs have reacted to variables beyond output, infl and exch rates (see LM).

- Great Moderation not reflected in regimes for shock volas. Why?

- Inflation rises in both regimes in CA in ABM after positive terms of trade shocks, but decreases in LS. Why?

- Justification for number of states

- No consensus in the lit. on importance of terms of trade shocks. → Contributions of terms of trade shocks in ABM?

Summary

- Very interesting (still preliminary) project with great potential.

- Paper would benefit from better motivating choice of type of time variation in the params.

- Possible extensions
  - More realistic expectation formation process
  - Consider other MP strategies