'Expectations in Dynamic Macroeconomic Models' Conference – DNB

Comments on:

LEARNING TO BELIEVE IN SIMPLE EQUILIBRIA IN A COMPLEX OLG ECONOMY – EVIDENCE FROM THE LAB

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- Famous OLG model by Grandmont (1985) features *perfect foresight cycles* of *any period* (and *chaotic equilibria*).

- Here: **equilibrium selection** by *Learning to Forecast Experiment* (LtFE) and *Learning to Optimize Experiment* (LtOE) – **excellent idea!**

- **Main result:** *convergence* to **period-two cycle** for substantial range of parameters (or to **monetary steady state**)

- Convergence to period-two cycle and coordination of behavior **stronger** in LtFE

Trying to understand convergence to the period-two cycle

- Participants have to make **two-period ahead forecasts**, In that case naive expectations are **correct** at a *steady state* **and** along a *period-two cycle*

- In experiments with *negative expectations feedback* (cobweb models, one-period ahead forecasting): **quick convergence to steady state**, even if it is *unstable* under naive expectations (Hommes et al., 2007, Heemeijer et al. 2009).

Intuition for main result: convergence to steady state of *second iterate* of law of motion (which corresponds to period-two cycle) even if it is unstable.

Conjectures:

1. *Period-three cycles* may emerge if participants **predict three periods ahead**.

2. Difficult to find *period-two cycles* in **one-period ahead forecast** experiments.

Other remarks and questions:

- Grandmont's OLG model is *representative agent model* – but $N = 6$ for experiment: absence of convergence to higher-order cycles because they are **difficult to learn**, or because of **coordination failure**?

- Higher-order cycles in LtFE by '*training*' (or giving *initial history of prices*)?

- Which **learning model** explains data best? Does *Heuristic Switching Model* substantially outperform *SAC learning*? How do they compare to the *Genetic Algorithm* of Bullard and Duffy (1998)?

- **Conclusion**: difficult to find complicated REE in the lab, but non-REE cycles relatively easy to find (e.g. in *positive expectations feedback* environments).
  Does this suggest that actual business cycles cannot be explained by REE?