

Discussion of  
“Robustifying Learnability”  
(Tetlow and von zur Muehlen)

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# ISSUE

- Design of Optimal Policy Rules
- Robustness to Model/Parameter Uncertainty
- Learnable Rational Expectations Equilibria (REE) when Agents' Information is Incomplete

# LITERATURE

- Vast
- **Optimal Monetary Policy Rules** (e.g. Taylor, 1999)
- **Robust Rules** (Brainard, 1967; Hansen and Sargent, 2003; TVZM, 2001, Onatski and Stock, 2002)
- **Rules Leading to Learnable REE** (Bray, 1982; Marcet and Sargent, 1989; Evans and Honkapoja, 2001; Bullard and Mitra, 2002; etc.)

# THIS PAPER

- Marries robust policy rules literature with learnability literature (learning is subject to uncertainty)

Asks:

- How to design rules that still ensure learnability of model in an uncertain world?
- Costs?

# METHODOLOGY

- 2 Models
- Model of Money Demand in Hyperinflations (Cagan, 1956)
- Standard New Keynesian Business Cycle Model (Woodford, 1999, 2003)
- Adaptive Learning

# METHODOLOGY (cont.)

- Uses structured value analysis (structured uncertainty as in Zhou et al, 1996) to find largest ranges of misspecification that can be tolerated in a learning model without compromising convergence to REE
- Welfare costs of maximizing prospects of learnability (“robustifying learnability”)

# RESULTS

- Table 1...varied.
- Robust learnable backward and current-looking rules require interest smoothing, way smaller weights than Taylor, 1993
- Robust learnable IFB rules demand strong inflation feedback, no smoothing

# COMMENTS

- Great paper. Clear, concise, useful!
- 1. Quadratic loss—Levin and Williams (2003) show that  $\lambda_x$  and  $\lambda_r$  also uncertain (depend on unknown deep parameters)
- 2. Table 1. Robust learnable backward and current-looking are super-inertial, contrary to IFB rules. Rationale?
- 3. How does result blend with require for smoothing in IFB rules for robustness to determinacy?
- 4. Horizon in IFB? Ideally zero?



# WAY FORWARD?

- Applicability to large-scale models?
- Patchy result map—scary quick sand for forward-looking central bankers...
- **Full-color** graphics *avanguardist*. Considered exhibiting at MALI?

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