Comments on "*Speculative Growth, Overreaction and the Welfare Costs of Technology-Driven Bubbles*", by K. Lansing

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Model background

- Introduces speculative overreaction (in the form of excessive reaction to technology shock) into an RBC model with endogenous growth and capital adjustment costs
- Disconnect between consumption and dividends due to an Arrow-Romer type of externality: consumption growth depends also on a separate source of income due to the learning by doing
- Speculative behavior: agents features stronger response to technology in their forecast

Model results

1. Overreaction: high volatility of asset prices and investment
2. Prolonged effect of over-reaction (a real time algorithm accounts for non linear effects): self-confirming equilibria in the category of feedback loops
3. Low forecast errors induce agents to stay with the speculative forecast
4. Welfare consequences: mixed results; mainly, with low risk aversion speculative behavior might reduce welfare costs
5. No clear cut prescriptions for policy makers: allowing speculative behavior might be beneficial with low risk aversion

Relation to literature

- Closest literature is the one on less-than-rational behavior and learning to explain asset prices puzzles: Bulkley and Tonks (EJ 1989), Timmerman (QJE 1993, ReStud 1996), Brock and Hommes (JEDC 1998), Cecchetti, Lam and Mark (AER 2000), Brennan and Xia (JME 2001), Bullard and Duffy (MD 2001), Honkapohja and Mitra (JEDC 2003), Adam, Marcet and Nicolini (2006).

- All use Lucas asset-pricing model (forecast about dividend process) or RBC type of production economy (forecast jointly price/dividend ratio and technology) or type of CAPM models

- Differences are in the type of near-rational forecast and in the solution method (linear versus non-linear)

1. Use of self-referential learning: agents forecast next period's stock price based on the estimated relation between dividends, stock prices and technology which would hold in the REE
2. A particular form of irrational behavior: a higher reaction to technology in the forecast
3. The RBC model also contains the production externality
4. Welfare results

Feedback loops versus herds

- Self-referential processes induce feedback loops that produce bubbles; however the initial cause of the loop is exogenous assumed
- More convincing explanations:

- Herds: forecasts are based on others investors actions
- Forecast based on policy actions

What about house price bubbles

- The author focuses on overreaction to technology: this can hardly explain other types of bubbles like house price bubbles
- Author argues that house price bubbles might be generated by *financial innovations* which might be perceived as technological innovation (improves efficiency)
- While technological improvements clearly increases efficiency, it is less clear that financial innovation does that

Relation to risk taking behavior

- In this paper risk aversion and risk taking behavior are independent from the speculative behavior
- Two observations, particularly, evident in the last crisis:
  1. Risk taking behavior is countercyclical: high when bubble grows and viceversa
  2. Excessive risk taking might cause (lead) the bubble

Risk perception and bubbles

- Endogenous changes in risk perception: Rajan (NBER 2005)
    1. Managers´ compensation based on short term returns induces high risk taking which induces bubbles
    2. Herds: financial managers invest based on other managers' actions
- Exogenous changes in risk perception: Bloom (Econometrica 2008)$\Rightarrow$ uncertainty shocks (changes in the variance of innovation to productivity), it amplifies booms and bursts and it persists
- External agency problems due to securitization: if managers, paid for short term return, can place risk on the market do not internalize social costs of excessive risk taking

Welfare and policy implications

- Model implies that under low risk aversion speculative behavior (overreaction to technology) might improve welfare
- Risk perception and risk aversion might be endogenously driven by bubbles
- Judging policy actions: risk taking behavior might even be driven by policy actions ("interest rates too low for too long")