Discussion of "A Theoretical Model of Leaning Against the Wind," by Allen, Barlevy, and Gale

Stephen Williamson
University of Western Ontario

November 2018

Key Issues

- What is an asset bubble?
- Are asset bubbles a concern for monetary policy?
- If so, if a central banker sees an asset bubble, what should he or she do?
- In particular, if we think of monetary policy in terms of "tightening" and "accommodating," should the central bank...
  - tighten, i.e. raise its nominal interest rate target (lean against the wind), or
  - accommodate, i.e. lower its nominal interest rate target?

What's an Asset Bubble?

- Price of an asset in period t is p_t.
- Future (in general uncertain) payoff stream is $\{d_t\}_{s=t+1}^{\infty}$
- Fundamental is defined as

$$p_t^f = E_t \sum_{s=t+1}^{\infty} m_{t,s} d_s,$$

  where $m_{t,s}$ is the "appropriate" rate at which agents in the model discount period s payoffs in period t.
- The bubble component of the asset's price is then

$$b_t = p_t - p_t^f$$

- Key issue is what a model tells us about how to discount future payoffs.

Bubbles in Economics

- Irrational bubbles:
  - driven by incorrect beliefs.
  - in some cases, there may be rational agents who hold the bubbly asset, in the hope they can sell to a fool before the bubble bursts.
  - As in typical behavioral approaches, if the policymaker is not a fool, he or she may be able to intervene to improve matters.
- Rational bubbles:
  - Can get this in models where the asset plays a role in transactions, or is useful as collateral.
  - Examples: monetary models, safe asset shortage models.
  - Typical issue here is that there can be inefficiency, the symptom of which is a low rate of return on the asset.
  - How to correct the problem?
    - Friedman rule in monetary economies – raise the real rate of return on the asset to attain efficiency.
    - Shortage of safe collateral – raise the real rate of return on government debt by issuing more, or through open market operations by the central bank.

Monetary Policy and Asset Bubbles

- Still plenty of disagreement about the causes and consequences of the global financial crisis.
- Some people think that the Fed fueled a housing market bubble in the early 2000s by keeping interest rates too low – the Fed didn't "lean against the wind."
- Bank of Canada currently appears to be concerned about a housing bubble in Canada's large cities.
- Idea in both Canada and the US, among central bankers, that increases in nominal interest rate targets can in part be justified by bubble concerns:
  - low interest rates encourage borrowing that fuels bubbles.
  - higher interest rates will discourage bubbles and make us better off.

Gadi's Paper

- Not easy to read – at least for me.
- Basic model of asset bubbles.
  - simple overlapping generations endowment economy.
  - start with two assets: (i) asset bearing a dividend (could be zero); (ii) storage.
- Approach is to show how the basic model works, then add stuff:
  - Sticky prices and cashless-economy monetary policy, as in Gali's paper.
  - credit
  - risky assets
  - default.
- Key question: What should monetary policy do in these environments?

Results

- It depends.
  - Gali says leaning against the wind is bad.
  - Gadi says it may be bad, or good, depending on the environment and parameters.

Comments

- I certainly learned from the paper – important literature that helps inform current policy.
- Gali (2014) paper is a reference point for this paper, but Gali paper a strange concoction:
  - cashless approach to monetary policy in an environment where assets play some fundamental role is not appropriate.
- In later sections of the paper, monetary policy is destruction of the endowment of some cohort – want to see actual monetary policy here, i.e. central bank balance sheet, assets, liabilities.
- Problem with the definition of a bubble – how to discount future asset payoffs.
  - Gadi discounts using endogenous market real interest rates.
  - Leads to the result that, when dividend is zero, no bubble – bubble only happens when there is dynamic inefficiency.
  - I would say that there's a bubble – price is positive, future payoffs are zero.

Simple First Year Graduate Student Model

- Looks like the basis for the model in Appendix B.
- OG model with production

$$U_t = -v(n_t) + c_{t+1}$$

- Fiat money injected through lump-sum transfers.
  - Multiple equilibria.
  - In stationary equilibrium, we know high rate of return gives efficiency.
  - Optimal monetary policy: Policy rule that gives determinacy and efficiency.
    - Off-equilibrium policy is accommodative – increase money growth in response to incipient increase in future output.
  - If money is valued in equilibrium, there is a bubble.
  - Key issue is how to manage the bubble.