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Macro-prudential Policy in a Fisherian Model of Financial Innovation

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Discussion of "Macro-prudential Policy in a Fisherian Model of Financial Innovation" by Bianchi, Boz, and Mendoza

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Motivation

- A quantitative framework to study macro-prudential policies in an environment with both financial and information frictions.
- Macro-prudential policies can alleviate **pecuniary externalities** (Lorenzoni 2008, Stein 2011, Bianchi 2010, Bianchi and Mendoza 2010, Jeanne and Korinek 2010 etc.)
- Pecuniary externality is stronger under imperfect information (Boz and Mendoza 2010)
- This paper: macro-prudential policies in Boz and Mendoza's environment. (Angeletos and La'o 2011)
- The interaction between the effects of imperfect information and pecuniary externality in influencing macro-prudential policies

Decentralized Equilibrium

- Sequence of allocations $[c_t, k_{t+1}, b_t]_{t=0}^{\infty}$ and prices $[q_t]_{t=0}^{\infty}$ such that the representative agent maximizes

$$\max_{\{c_t, k_{t+1}, b_{t+1}\}} \mathbf{E}_0^s \left[\sum_{t=0}^{\infty} \beta^t \frac{c_t^{1-\sigma}}{1-\sigma} \right]$$

subject to

$$\begin{aligned} q_t k_{t+1} + c_t + \frac{b_{t+1}}{R_t} &= q_t k_t + b_t + \epsilon_t Y(k_t) \\ -\frac{b_{t+1}}{R_t} &\leq \kappa_t q_t k_{t+1} \end{aligned}$$

and the land market clears

$$k_t = 1.$$

- $\kappa_t \in \{\kappa^h, \kappa^l\}$ Markov, $\kappa^h = 0.926$ and $\kappa^l = 0.642$ unknown transition matrix
- Pricing functions $q_t^{DEL}(b, \epsilon, \kappa)$ versus $q^{DEF}(b, \epsilon, \kappa)$

The social planner's problem

- The social planner solves

$$\mathbf{E}_0^i\left[\sum_{t=0}^{\infty}\beta^t\frac{c_t^{1-\sigma}}{1-\sigma}\right]$$

subject to

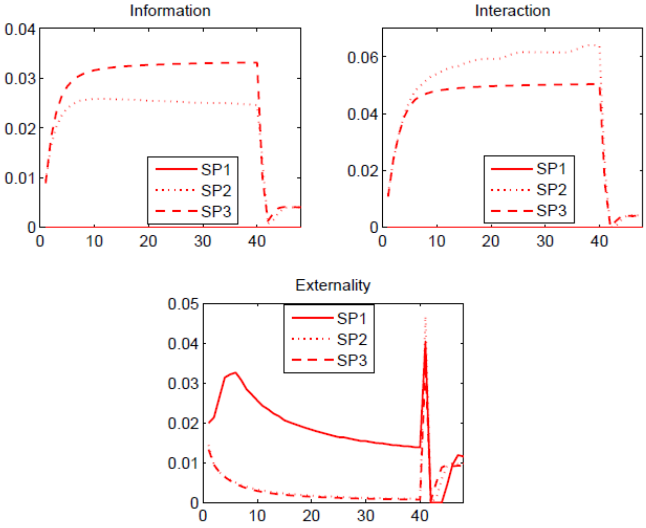
$$\begin{aligned} c_t+\frac{b_{t+1}}{R_t} &= b_t+\epsilon_t Y(1) \\ -\frac{b_{t+1}}{R_t} &\leq \kappa_t q_t.1 \\ q_t &= q_t^i(\epsilon_t, b_t, \kappa_t) \end{aligned}$$

- Three possibilities: choice of $\mathbf{E}_0^i[.]$ and choice of $q_t^i(\epsilon_t, b_t, \kappa_t)$.

The social planner's problems: Three possibilities

	$q_t^i(\epsilon_t, b_t, \kappa_t) = q_t^{DEL}(\epsilon_t, b_t, \kappa_t)$	$q_t^{DEF}(\epsilon_t, b_t, \kappa_t)$
$\mathbf{E}_0^i[.] = \mathbf{E}_0^s[.]$	SP1	
$\mathbf{E}_0^i[.] = \mathbf{E}_0[.]$	SP2	SP3

Quantitative Result: Interaction between Pecuniary Externality and Information



Which stand should we take on the information set of the social planner?

- SP1 versus SP2: Do policy makers have better information than the private agents?
- Strong message: the dynamics in SP1 and DE are very close to each other in the baseline model.
- Sensitivity Analysis: Initial degree of optimism
- SP2: General lesson with the planner being more cautious than the representative agent.

Which stand should we take on the information set of the social planner?

Which pricing function?

- In Lorenzoni (2008) or Bianchi (2010),current prices are determined by the current choice variables of the representative agents.
- Here, the current land price is forward-looking and thus is determined by the current and all the future choice variables

$$q_t = q_t \left(\{ \epsilon_{t'}, b_{t'}, \kappa_{t'} \}_{t' \geq t} \right).$$

- Example: Pricing of Asset Backed Securities
- Simplifying assumption: $q_t = q^{DEL} (\epsilon, b, \kappa)$ or $q^{DEF} (\epsilon, b, \kappa)$
- SP2 versus SP3: $q^{DEL} (\epsilon, b, \kappa)$ or $q^{DEF} (\epsilon, b, \kappa)$ generates significant quantitative differences.

Conclusion

- Excellent paper that raises an important normative question
- Transparent quantitative framework to study macro-prudential policies
- Practical issues regarding determining and implementing the optimal policies