Discussion of Monetary and Macroprudential Policies

Simon Potter[1]

New York Fed

Sep't 2010

[1] The views expressed in this discussion are those of the presenter and not necessarily representative of those of the Federal Reserve Bank of New York or the Federal Reserve System

Modeling Feedback Loops

- Financial Crisis refocused attention on feedback loops between real and (within) financial sector
  - main interaction point is net worth (market price $\times$ equity stake in asset/business/house) of some pivotal group
    - Entrepreneurs/firms
    - Financial Intermediaries
    - Households
  - Positive Feedback can enhance growth on the way up
  - Adverse Feedback can destabilise the economy, examples
    - Debt Deflation (1930s)
    - (Fear of) Fire Sales into illiquid/underpriced markets
    - Ambiguity aversion/pessimists take over
- Contribution of paper is to start analyze of policy choices
  - Monetary Policy vs. Macroprudential Policy
  - Macroprudential is the new "buzz" word

What is microprudential policy/supervision?

- Focus on individual banks/financial institutions
  - Ex ante capital/liquidity requirements depend only on condition of bank
  - Supervisors examine resilience of bank to the business cycle
  - Until recently supervision tended to lack forward looking elements
  - Well defined role in closing standard banks
  - Little adaption to financial innovation outside of the bank
- Clear failures even under limited scope of microprudential in last few years
  - Regulatory capture
  - Complexity of financial institutions
  - human capital: regulator vs banks
  - market discipline pillar possible negative value

Macroprudential: Volcker last week in Chicago "the word grates..."

- Interplay with macroprudential important for *the future of monetary policy*
  - Much evidence that regulation and supervision failed not monetary policy before the crisis
    - Main failure was partial equilibrium approach of microprudential supervision, no systemic risk
  - Minority view amongst current central bankers that monetary policy facilitated the failure of regulation, supervision etc
    - Close to a majority view amongst outside observers
    - Most of the these outside observers are deeply sceptical about macroprudential for the same reasons they were proven correct on microprudential

Macroprudential

- Positive View: Macroprudential policy fills “holes" that monetary policy cannot by definition fill
  - Requires limiting definition of monetary policy to traditional interest rate and reserves
    - Macroprudential gives more tools
    - Some might wonder why they were not used before
- (Possibly) Negative View: Macroprudential policy will conflict with monetary policy
  - Partially resolve conflict by giving macroprudential authority to independent central bank
  - Is independence in macroprudential authority welfare maximizing (consistent with democracy) as for central bank?
  - Paper gives one answer but does not derive optimal policies from social welfare

Evidence

- Limited empirical evidence on any of these questions
  - Example of Asian economies often used but how relevant to US and Europe?
  - Canada another example but very special structure to banking industry
- Thus, models required to provide some initial insight
- Will be followed by learning by doing across three different structures between Europe, UK and US

Relationship to Literature

- Many recent papers extend toolkit of central bank by allowing for asset composition of balance sheet to have real effects
  - Curdia and Woodford most rigorous analysis of optimal policy
  - Eggertsson et al adds liquidity issues
  - Gertler and Karadi has explicit "bank capital"
    - GK raises the question why the central bank not some other authority
- Paolo et al go beyond these papers in framing a number of important new policy issues

Model

- Builds on Iacoviello and previous work of their own for financial sector
  - Monopolistic competition in banking sector
  - Collateral constraints in borrowing
  - Housing asset in fixed supply
  - Banking sector has a desired leverage $(\frac{L}{K})$ ratio $1/v$, costly to miss
  - Feedback loops present but linear solution methods
    - see recent work by Brunnermier
- Monetary authority sets R^P, Macroprudential sets v

$$R^L = R^P + \kappa \left(v - \frac{K}{L} \right) \left(\frac{K}{L} \right)^2 + \text{markup}$$

- Possible conflict since both influence lending rate
  - Examine partial adjustment feedback rules between macroeconomy and tools where
    - $\overline{R}$ and $\overline{v}$ are the "steady state" values
    - Note $\overline{v}$ is partly ex ante regulator choice

Leverage

1. Model defines bank capital as retained earnings

$$K_t^b = (1-\delta)K_{t-1}^b + \omega_t^b \pi_{t-1}^b$$

   - Dividends are

$$d_t^b = (1-\omega_t^b)\pi_{t-1}^b$$

   - Much current macroprudential discussion on rules for ω_t^b

2. Loans are one period and satisfy balance sheet constraint

$$L_t^b = D_t^b + K_t^b$$

   - Book value of loans equal to market/fair value
   - Capital is fixed when lending decision made
   - Symmetric equilibrium, so can focus on representative (wholesale) bank

1. Quadratic costs of missing leverage ratio

$$\kappa \left(v_t - \frac{K_t}{L_t} \right)^2 K_t$$

   - As κ gets large macroprudential authority can set quantity of loans by its choice of v_t
     - scaling by level of capital needs to be motivated
     - restricting size of banks has big effects in this model
     - positive capital constraint given low profile in paper
2. Macroprudential authority cares about minimizing the volatility of loans to output
   - This loss function and linear feedback rule could be justified as robust analysis of full nonlinear model
   - In full nonlinear model standard Lucas result that small costs to business cycle **might** not hold
     - If Lucas does hold then see Friedman to Volcker sceptics on stabilization policy
   - In linearized model Lucas result must still hold, steady state contains all the relevant information
     - $v_t = 0$ and size restrictions on banks might be best ex ante policy

Why is nonlinearity important?

- Undermines the standard certainty equivalent approaches to optimal policy that produces linear feedback rules
- Can gives very different cost to business cycles to usual Lucas style analysis
- Ex post offers high benefits to stabilization policy
- Ex ante problem that countercylical government policy can add to the destabilizing dynamics of the the private economy if can't directly address the underlying friction
- From a central bank model perspective we only have linear or linearized nonlinear models that completely miss this type of fragility
    - Much evidence in recent years that this is an important gap