Financial Stability in Open Economies

Ippei Fujiwara **Yuki Teranishi**
Discussant: Federico Mandelman (Federal Reserve Bank of Atlanta)

Quantitative Approaches to Monetary Policy in Open Economies
May 2009

Monopolistic Banking and Business Cycles

- On a **business cycle context**, there is a vast literature on monopolistic power in **goods** and **factor markets**.
- However there is practically no research that considers this possibility on **Financial Markets. Why this is relevant?**
- Financial Liberalization has spurred bank consolidation.
- Banks remain a primary source of funds for entrepreneurs in several countries.

Countercyclical Markups

- Countercyclical Markups constitute a key propagation mechanism in Business Cycle models (starting with Pigou, 1927 and Keynes, 1939).
- Basic idea in New Keynesian models: Demand Shocks $\Longrightarrow$Nominal rigidities $\Longrightarrow$Prices do not adjust $\Longrightarrow$Production expands$\Longrightarrow$This erodes markups.

Bank Markups

- VERY NICE and interesting contribution: Ippei and Yuki extend this idea to banking.
- The MC is the interest on deposits, and banks add a markup on interest rate on loans.
- Interest rate on loans are subject to nominal rigidities *a la* Calvo.
- The bank channel may act as an "attenuator" of monetary policy.
- Policy rates may fall during recessions, but loan rates may be sluggish to react as the bank markup increases.

Bank Markup identification on the data

- The interest rate spread has two main components.
  $R_{loans} - R_{deposits}$ = Spread = Bank markup + Risk Premium.
- **Main Problem:** this risk premium is countercyclical (BGG financial accelerator).
- Higher rates on loans during recessions may be the result of credit rationing?

Bank Markup identification on the data

- **Term structure:** Loans and deposits are set at different term maturities that could lead to sluggishness when considering aggregate data on loans.
- E.g. In recessions the cost of funding for banks decreases immediately, but the have to renegotiate credit lines in 1, 3, 6 months.
- **Operational Costs:** Banks operate with large economies of scale, if the credit base shrinks, they maybe forced to charge higher markups.

Countercyclical Bank Markups

- Nonetheless, there are several studies which use other proxies for bank markups rather than ex-ante spreads .
- Effectively, they find that bank markups are countercyclical and monopoly distortions increase during recessions.
  1. E.g.: Lerner indexes (Cetorelli, 2003), ex-post margins (e.g. Aliaga-Diaz & Olivero, 2006, Claessens et al, 2000)
  2. Banks Spreads are more countercyclical in areas in which banks are more concentrated (Hannan and Berger, 1991, Leuvenstein et al, 2008)

Origin of the Countercyclical Bank Markups

- Consistently, bank markups seem to be **even more countercyclical** in emerging economies where the bank system is more concentrated (Claessens et al 2000, Mandelman 2006).
- This fact goes against the story of "sluggishness" on loan rates.
- While the cost of bank funding is countercyclical (policy rates) in developed countries, in emerging economies the cost is procyclical (Neumeyer and Perri, 2005)
- An increase in the cost of bank funding (e.g. EMBI country risk) in recessions should **lower** the bank markups as loan rates are sticky (i.e. procyclical markups).

Origin of the Countercyclical Bank Markups

Is there strategic pricing instead?

- Chevallier and Sharfstein (1986) find that liquidity-constrained firms boost profit margins by raising prices, cutting their "investment" in market shares. (Aliaga-Diaz & Olivero, 2008, extend this to banking)
- Rotemberg and Woodford (1992), collusions are harder to sustain during booms (Mandelman, 2006)
- Outside-bank funding is more available in booms, putting pressure on the banking system and forcing low markups (Thornton, 1994)

Other Comments: Model Microfoundations

- The model assumes that a fraction $[0, n]$ of workers belongs to the DFS while the remaining $[n, 1]$ belongs to a IFS
- Firms use all labor inputs to produce.
- **Each worker's wage bill has to be strictly financed by a different bank**.$[0, n]$ domestic banks, $[n, 1]$ international banks.
- This provides banks with Monopoly power.
- However credit is not a differentiated good. Nothing prevents firms from pooling resources from different banks.
- Suggestion: Exploit differentiation. For example, banks that are close to firms, have access to "soft information" and have de facto regional monopolies.

Other Comments: Propagation Mechanism

- The model assumes that every period a **fixed fraction** of the wage bill has to be financed by banks.
- The model could be extended to address an amplification mechanism:
- Credit conditions may depend on firms' leverage position (leverage ratio: debt\net worth),
- Higher bank markups in recessions $\Longrightarrow$higher interest rates and lower asset prices $\Longrightarrow$damage firms' balance sheets $\Longrightarrow$increase the risk premium.

Policy options

- **Other Interesting idea in this paper**: If international loan rates are sticky, and foreigners carry the exchange rate risk, there are incentives to manipulate the nominal exchange rate.
- If the model is **symmetric**, under specific circumstances, there are coordination gains between countries.

Policy options

- One interesting extension, not considered in the model setup:
- The bank markup will be eroded by inflation surprises. This creates an "inflation bias" even when prices are flexible.
- Moreover, this holds even if loan rates are not sticky.
- Let's say we we have one period risk free debt. Bank profits are: $E_t \left\{ \Lambda_{t,1} \left[\Xi_t (1 + i_t) \frac{D_t}{P_{t+1}} \right] \right\}$.
- That is a markup over the principal to be collected **after** the transaction is settled.
- Unexpected inflation erodes such disintermediation.