DISCUSSION OF

STRESSED BUT NOT HELPLESS: STRATEGIC BEHAVIOR OF BANKS UNDER ADVERSE MARKET CONDITIONS

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Contribution of the paper

- Enables policy impact assessment under stress (regulatory framework, CCyB)
- Measures the transmission of shocks within the banking system
- Allows attribution analysis from the use of 'static balance sheets' in stress testing
- Quantifies the impact of bank heterogeneity on financial aggregates
- Provides insights of the effect of banking system structure (imperfect competition) on financial stability (deleveraging)

What is the paper about?

MANAGEMENT ACTIONS ⟺ OLIGOPOLISTIC STRUCTURE

Rebalancing of the Portfolio

Loans; Securities

Objective Function

Risk-adjusted RoE

Regulatory Constraints

CAR; Leverage; LCR

Monopolistic competition

Transmission Channels

- Lending rate channel ⇨ Interest Income
- Market valuation channel ⇨ Trading Income
- Funding channel ⇨ Interest Expense

Key findings

Stressed loan returns

-40bps
Δc=-2.5%
Rather than
Δc=-3.8%

Strategic behavior softens deleveraging

Systematic credit shock → Results depend on shock severity and release of CCyB

Idiosyncratic credit shock → Strong bank increases credit exposure

Scenario-Based Stress Test
Asset substitution
Banks rebuild capital buffers
Banks do not breach LCR
Banks' strategic behavior softens loan deleveraging

→

	Price taking	Strategic
T=1	Δc=-15%	Δc=-5%
T=2	Δc=-22%	Δc=-15%

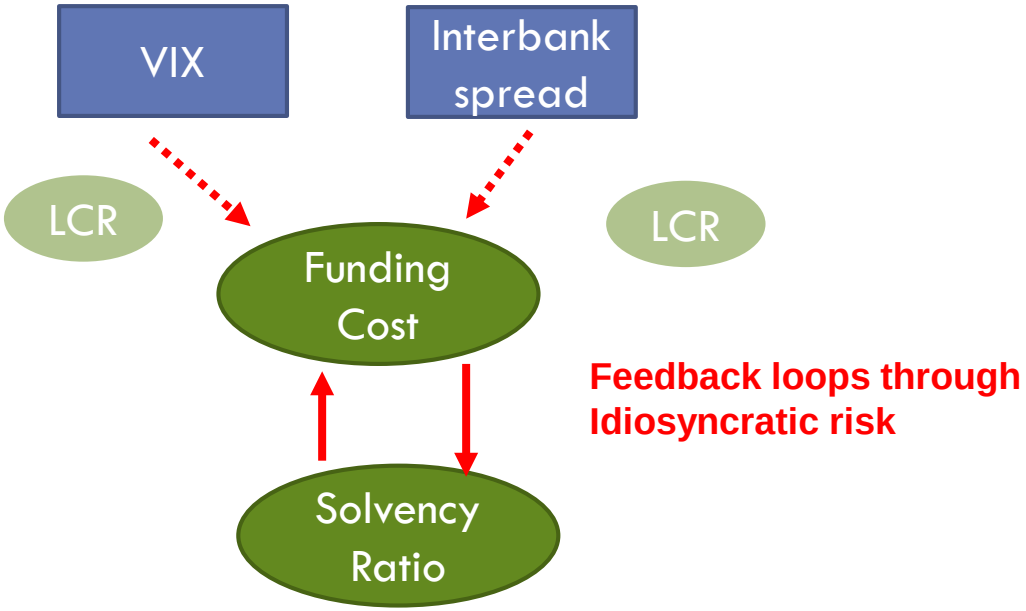
Scope of Management Actions

- While banks manage actively their asset portfolio, they follow a passive strategy on their liability structure
  - Liquidity shocks do not play a role
  - Asset-driven banks
- Consider "liquidity management actions"
  - The bank is forced to raise cash to satisfy contingent liabilities (deposit run-off; margin calls)
  - The bank takes pre-emptive action to contain funding costs
    - Increase secured borrowing
    - Increase retail deposit base

The Role of Liquidity

- Liquidity risk affects solvency through the funding cost channel (and fire sales)
  - high LCR ⇒ low returns (good times)

    softens funding shocks (bad times)



Identification of demand shocks

- **Assess stability of results across demand/production functions**
  - To identify supply shocks (strategic behavior) from demand shocks (scenario)
  - How general are the results of banks' strategic behavior on the path of business lending under stress:
    - demand function: linear, quadratic, isoelastic?
    - demand shocks: parallel shift; change in slope?
  - To examine the impact of heterogeneity of funding costs on aggregate lending:
    - heterogeneity in leverage/funding structure
    - systematic/idiosyncratic funding shocks

Simple Example

- Linear demand, convex fc

$$p = a - 2bQ$$

$$c(Q) = cQ^2$$

- Cournot equilibrium

$$Q_{t,1}^{C} = Q_{t,2}^{C} = \frac{a}{2(3b+c)}$$

- Price-taking

$$Q_{t,1}^{PT} = Q_{t,2}^{PT} = \frac{a}{2(2b+c)}$$

Demand shock 1: at+1<at

$$\ln \frac{Q_{t+1,i}^{C}}{Q_{t,i}^{C}} = \ln \frac{Q_{t+1,i}^{PT}}{Q_{t,i}^{PT}} = \ln \frac{a_{t+1}}{a_t}$$

Demand shock 2: bt+1>bt

$$\ln \frac{Q_{t+1,i}^{C}}{Q_{t,i}^{C}} = \frac{\ln(6b+2c)}{\ln(6b'+2c)}$$

$$\ln \frac{Q_{t+1,i}^{PT}}{Q_{t,i}^{PT}} = \frac{\ln(4b+2c)}{\ln(4b'+2c)}$$

Considerations

- Robustness of results to alternative max objective:
  - Minimize duration gap (fair valuation/NII)
  - Minimize cost of economic/regulatory capital
- Link lending rate shocks to changes in quantity/composition of funding
- Explain difference between roll-over rate of maturing instruments and adjustments to volume
- Consider the role of expectations in securities' returns (beta), and lending rates (risk premia)

Next Steps

- Financial stability analysis of oligopolistic competition
  - Reduced credit supply, but may help soften impact of stress
- Explore non-linearities around breaches of regulatory constraints
- Link funding risk (Basel LMTs) with asset management actions (e.g. rollover rate of retail loans)
- Calibration of CCyB/RWAs/LCR under imperfect competition
- Conduct attribution analysis of “static” versus “dynamic” balance sheets

THANK YOU