

Banking Competition and Stability:  
The Role of Leverage

by

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# General motivation - I

- There is a vivid discussion in the banking literature on the relationship between competition and stability
- Two main contrasting views
  - Charter value theory (Keeley, 1990): *less* competition, *more* stability
  - Risk shifting theory (Boyd and De Nicolò, 2005): *more* competition, *more* stability
- Key issue: “who/what” determines the level of banks’ risks?
  - The banks
  - The borrowing firms
  - Choice of risk (banks) or effort (borrowing firms)

# General motivation - II

- Empirical evidence does not help solve the theoretical “disagreement”
- Results differ depending on
  - sample used (cross country or single country) and period considered
  - measurement of financial stability (type of risk)
  - measurement of competition (concentration versus competition, Lerner index, measures of contestability, etc.)

# This paper

- It studies the relationship between competition and stability in a new and richer context
- Two novel ingredients of the analysis
  - Different types of risk: banks' insolvency risk, portfolio risk, illiquidity risk and systemic risk
  - Leverage (both exogenous and endogenous) as a way to connect all types of bank risks
- Important contribution to the literature, where normally
  - Only (or mostly) insolvency risk is considered
  - Funding structure of banks is exogenous (and normally only debt is considered)

# Preview of the results

1. The relationship between insolvency risk and banking competition crucially depends on the degree of banks' market power and their liability structure
  - Risk shifting hypothesis is valid for a low level of insured deposits and high levels of market power
  - Charter value hypothesis holds otherwise
2. Banking competition always increases liquidity risk, when leverage is exogenous, but not when it is endogenous
3. The effect of competition for the total credit risk of a bank is as in 1. (i.e., effect on insolvency risk dominates)
4. The results are robust to the introduction of systemic risk

# General comments

- Interesting focus on different risks and on the role of banks' funding structure in explaining the competition-stability nexus
  - Numerous results “reconciling” the different views
- Very rich framework
  - Perhaps a bit “too rich”?
  - Various parts are a bit “separate” from each other
    - For example, the analysis of the various risks
  - Maybe better to streamline the analysis?
    - Take out the analysis of systemic risk?
- Clarity could be improved!

# The framework – Asset side

- Each entrepreneur (E) chooses success probability to max

$$E(U) = P(x - r) - \frac{P^2}{2b}$$

where  $r$  is the loan rate and  $b \in (0, B]$  is the E's type

- Each bank is subject to a bank-level risk factor  $z$  and each project fails if  $y < 0$  where

$$y = -\Phi^{-1}(1 - P) + z$$

- A project fails because of E's moral hazard (low  $P$ ) or bad portfolio risk realization (low  $z$ )
- Loan market is fully covered and all Es are financed

# The framework – Funding & liquidity risk

- Each bank is of size 1 and is financed with
  - $F$  from insured depositors
  - $V_D$  from short term wholesale creditors promising  $qD$  at  $t=1$  and  $D$  at  $t=2$
  - $1-F-V_D$  from equity holders
- Wholesale depositors receive signal  $s_i = \theta + \varepsilon_i$  and may run
- The bank satisfies early withdrawals by selling the long term asset at a fire sale discount

$$\frac{\theta}{(1+\lambda)} > qD$$

- Possibility of contagion through the lower market price of banks

# Comments on asset side

- There is no bank moral hazard: A project's success depends on E's effort (endogenous) and bank's risk realization (exogenous)
  - Does this matter for the relation with the charter value and the risk taking hypotheses?
  - Is the choice of D the “same” as the choice of “z”?
- All Es are served and pay the same  $r$ 
  - What would happen if this was not the case and some Es were rationed depending on the level of  $r$ ? How would the composition of banks' portfolios change with competition?
  - “ $r$ ” is assumed a sufficient statistic for competition. Are results robust to more general specifications affecting loan demand?

# Comments on funding side

- Banks hold only long term assets and competition increases probability of a bank being illiquid
  - What about if they could also choose to hold short term assets?
  - Competition would favour liquidity holdings, thus reducing banks' exposure to liquidity risk
- Who buys the assets sold at  $t = 1$ ? Is  $\theta$  observable at  $t=1$ ? Otherwise how can the price be  $\theta/(1 + \lambda)$ ?
- Why to consider both the case with endogenous and exogenous leverage? Isn't leverage "always" endogenous?

# In conclusion

- Very nice paper bringing new insights on the competition-stability nexus
- Perhaps streamline the analysis a bit, and clarify some parts
- Discuss/extend some of the assumptions/shortcuts to strengthen the robustness of the results