

# Financial Stability and the Macroeconomy

Discussion

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- 1) Booms and Systemic Bank Crises
- 2) Over-leverage and macroeconomic fragility
- 3) Stress testing

# 1) Booms and Systemic Banking Crises

F. Boissay, F. Collard and F. Smets

1. Dynamic general equilibrium model
2. Non-trivial heterogeneous banking sector
3. Interbank market
4. Market freezes
5. Systemic banking crises
6. Credit crunches
7. Severe recessions

- A sequence of favorable, non permanent, supply shocks hits the economy leading to a boom
- Reversion to average productivity reduces demand for credit and interest rates
- Counterparty risk in the interbank market goes up
- Market finance recedes

# Two regimes

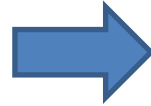
- Most of the time bank assets remain below the threshold for financial crises
- The model behaves like a standard financial accelerator model
- Once in a while – on average every forty years – there is a banking crisis, preceded with a credit boom and brings about both a credit crunch and a recession.

# Asymmetric information

- Moral Hazard
- Cash diversion
- Adverse selection: lenders do not observe borrowers' skills
- Holmström and Tirole – borrower's pledgeable income limit interbank lending

## **Proposition 2**

- Interbank loan market freeze



## **Proposition 3**

- Credit crunch

# Questions:

- Key insight: a banking crisis is not a dot-com crisis
- Are banking crisis preceded by favourable productivity shocks? What about bubbles?
- Understanding regime switching is crucial. So, is the interbank market collapse the whole story? Is the heterogeneity of the banking system the critical issue? What about liquidity spirals?



## 2) Bank Overleverage and Macroeconomic Fragility

Ryo Kato and Takayuki Tsuruga

- Combine Diamond and Rajan (2001a, 2012) into an overlapping-generations (OLG) model.
- Liquidity crises occur with non-zero probability.

### **Result:**

- Individual competitive banks take on excessive risks.

# Pecuniary externality

- Each bank individually fail to internalize the general equilibrium effect it generates on asset prices.
- In a static Arrow-Debreu framework the price of the asset would be observed. In a dynamic set up a pecuniarity externalities occur.
- Relevant: relate to excessive leverage, excessive lending, low risk premia in good times. Adrian and Shin (2009)

# Policy implications

- Levy on Debt is not the solution (paradoxical)
- Pre-announced bank bailouts may ill-incentivize banks to take on even higher risks.
- Commitment to low interest rates has the same effect (as in Farhi and Tirole)
- Are capital requirements the solution?

# Questions

- Active monetary policy could prevent banking crises
- Basel II, pillar 2, principle 2: the supervisor should assess the banks' risk models. The general equilibrium dimension should be feed backed into microprudential regulation through the right risk weights. Is there a need for a « macroprudential policy »?

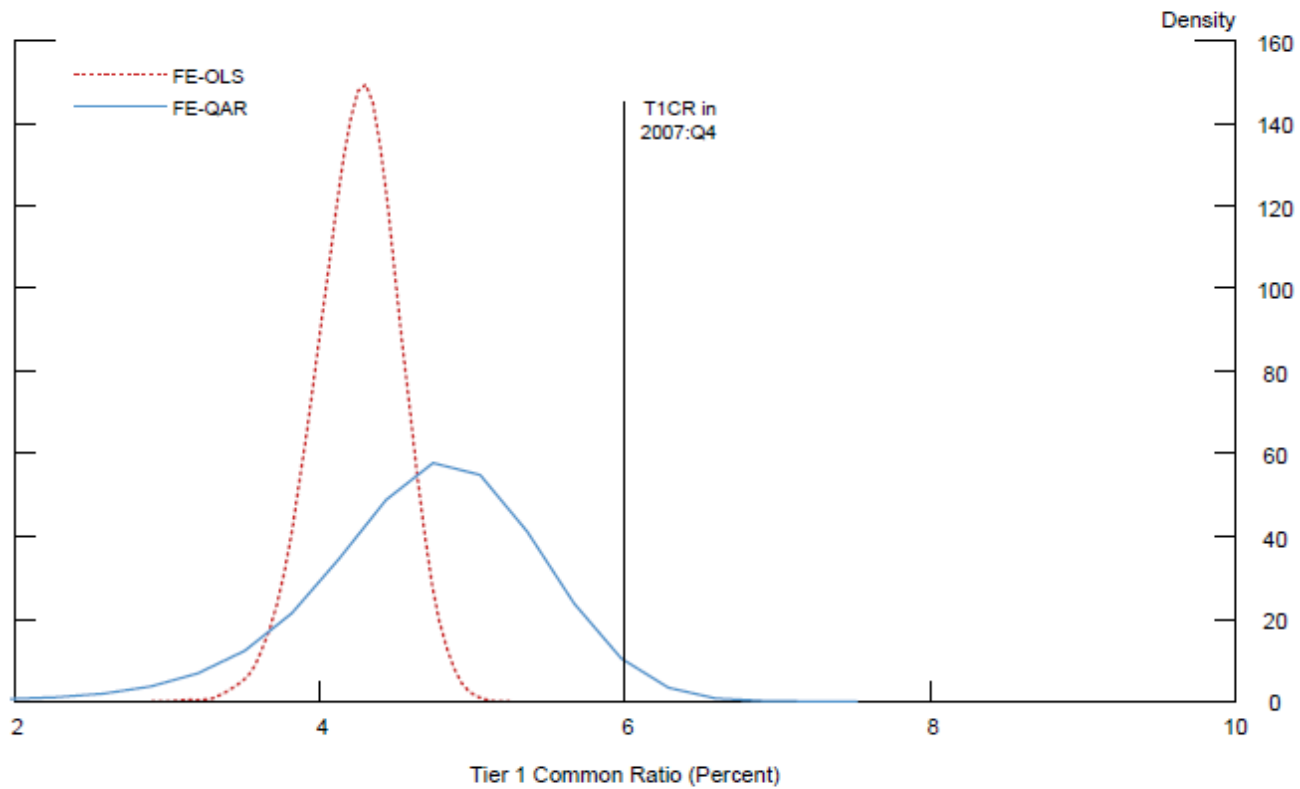
### 3) Stress-Testing U.S. Bank Holding Companies: A Dynamic Panel Quantile Regression Approach

- By F. Covas, Ben Rump and Egon Zakrajšek
- “Top-down” stress testing models
- Fixed effects quantile autoregressive model with exogenous macroeconomic variables

# Results

- Fat tails
- Capital shortfalls estimated using the dynamic panel quantile regression model are higher than the capital shortfalls obtained using a linear dynamic panel data model.
- The approach captures non-linearities in bank losses

Figure 8: Empirical Density of Projected T1CR in 2009:Q4 - Bootstrap Approach



# Macroeconomic variables

- Real gross domestic product
- Unemployment rate
- House price index
- Price index for commercial real estate
- Three-month Treasury yield
- Ten-year Treasury yield
- Ten-year yield on BBB-rated corporate bonds



# Questions:

- Should the rate of growth of credit be one of the macro variables?
- Should the composition of credit matter?
- Is the capital conservation buffer well designed?
- Is the countercyclical buffer well designed?

# Inside the black box

- « Non-linearities » or discontinuities due to regime shifting should be acknowledged.
- What are the seeds of a banking crisis?
- Macroprudential risks due to bubbles on asset prices, fire sale prices, herding and general equilibrium should be acknowledged and fed into microprudential regulation.
- Overall remaining risks (if any) should be the object of macroprudential policy.